

Sequence Listing

<110> Baker, Kevin P.
Botstein, David
Desnoyers, Luc
Eaton, Dan L.
Ferrara, Napoleone
Fong, Sherman
Gao, Wei-Qiang
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Godowski, Paul J.
Grimaldi, Christopher J.
Gurney, Austin L.
Hillan, Kenneth J.
Pan, James
Paoni, Nicholas F.
Roy, Margaret Ann
Smith, Victoria
Stewart, Timothy A.
Tumas, Daniel
Watanabe, Colin K.
Williams, P. Mickey
Wood, William I.

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<210> 10
 <211> 319
 <212> PRT
 <213> Homo sapiens

<220>
 <221> sig_peptide
 <222> 1-17
 <223> Signal Peptide

<220>
 <221> misc_feature

<222> 36-47, 108-113, 166-171,198-203, 207-212

<223> N-myristoylation Sites.

<220>

<221> misc_feature

<222> 39-42

<223> Glycosaminoglycan Attachment Site.

<220>

<221> TRANSMEM

<222> 136-152

<223> Transmembrane Domain

<220>

<221> misc_feature

<222> 161-163, 187-190 and 253-256

<223> N-glycosylation Sites.

<400> 10

Met Leu Phe Trp Val Leu Gly Leu Leu Ile Leu Cys Gly Phe Leu
1 5 10 15

Trp Thr Arg Lys Gly Lys Leu Lys Ile Glu Asp Ile Thr Asp Lys
20 25 30

Tyr Ile Phe Ile Thr Gly Cys Asp Ser Gly Phe Gly Asn Leu Ala
35 40 45

Ala Arg Thr Phe Asp Lys Lys Gly Phe His Val Ile Ala Ala Cys
50 55 60

Leu Thr Glu Ser Gly Ser Thr Ala Leu Lys Ala Glu Thr Ser Glu
65 70 75

Arg Leu Arg Thr Val Leu Leu Asp Val Thr Asp Pro Glu Asn Val
80 85 90

Lys Arg Thr Ala Gln Trp Val Lys Asn Gln Val Gly Glu Lys Gly
95 100 105

Leu Trp Gly Leu Ile Asn Asn Ala Gly Val Pro Gly Val Leu Ala
110 115 120

Pro Thr Asp Trp Leu Thr Leu Glu Asp Tyr Arg Glu Pro Ile Glu
125 130 135

Val Asn Leu Phe Gly Leu Ile Ser Val Thr Leu Asn Met Leu Pro
140 145 150

Leu Val Lys Lys Ala Gln Gly Arg Val Ile Asn Val Ser Ser Val
155 160 165

Gly Gly Arg Leu Ala Ile Val Gly Gly Gly Tyr Thr Pro Ser Lys
170 175 180

Tyr Ala Val Glu Gly Phe Asn Asp Ser Leu Arg Arg Asp Met Lys
185 190 195

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Ala Phe Gly Val | His Val Ser Cys Ile | Glu Pro Gly Leu Phe Lys | 200 | 205 | 210 |
| Thr Asn Leu Ala | Asp Pro Val Lys Val | Ile Glu Lys Lys Leu Ala | 215 | 220 | 225 |
| Ile Trp Glu Gln | Leu Ser Pro Asp Ile | Lys Gln Gln Tyr Gly Glu | 230 | 235 | 240 |
| Gly Tyr Ile Glu | Lys Ser Leu Asp Lys | Leu Lys Gly Asn Lys Ser | 245 | 250 | 255 |
| Tyr Val Asn Met | Asp Leu Ser Pro Val | Val Glu Cys Met Asp His | 260 | 265 | 270 |
| Ala Leu Thr Ser | Leu Phe Pro Lys Thr | His Tyr Ala Ala Gly Lys | 275 | 280 | 285 |
| Asp Ala Lys Ile | Phe Trp Ile Pro Leu | Ser His Met Pro Ala Ala | 290 | 295 | 300 |
| Leu Gln Asp Phe | Leu Leu Leu Lys Gln | Lys Ala Glu Leu Ala Asn | 305 | 310 | 315 |
| Pro Lys Ala Val | | | | | |

<210> 11

<211> 2720

<212> DNA

<213> Homo sapiens

<400> 11

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caactgtcga gattgcagcg gaatatgatt ctcttctctc ttgcctttct 300
gcttttctgt ggactcctct tctacatcaa cttggctgac cattggaaag 350
ctctggcttt caggctagag gaagagcaga agatgaggcc agaaattgct 400
gggttaaaac cagcaaattc acccgtctta ccagctcctc agaaggcgga 450
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<210> 12
 <211> 699
 <212> PRT
 <213> Homo sapiens

<220>
 <221> TRANSMEM
 <222> 21-40 and 84-105
 <223> Transmembrane Domain (type II)

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 Gln Ser Asp Phe Leu Thr Pro Pro Val Gly Gly Ala Pro Trp Ala
 20 25 30
 Val Ala Thr Thr Val Val Met Tyr Pro Pro Pro Pro Pro Pro
 35 40 45
 His Arg Asp Phe Ile Ser Val Thr Leu Ser Phe Gly Glu Ser Tyr
 50 55 60
 Asp Asn Ser Lys Ser Trp Arg Arg Arg Ser Cys Trp Arg Lys Trp
 65 70 75
 Lys Gln Leu Ser Arg Leu Gln Arg Asn Met Ile Leu Phe Leu Leu
 80 85 90
 Ala Phe Leu Leu Phe Cys Gly Leu Leu Phe Tyr Ile Asn Leu Ala
 95 100 105

| | | | |
|-----------------|---------------------|---------------------|-----|
| Asp His Trp Lys | Ala Leu Ala Phe Arg | Leu Glu Glu Glu Gln | Lys |
| 110 | | 115 | 120 |
| Met Arg Pro Glu | Ile Ala Gly Leu Lys | Pro Ala Asn Pro Pro | Val |
| 125 | | 130 | 135 |
| Leu Pro Ala Pro | Gln Lys Ala Asp Thr | Asp Pro Glu Asn Leu | Pro |
| 140 | | 145 | 150 |
| Glu Ile Ser Ser | Gln Lys Thr Gln Arg | His Ile Gln Arg Gly | Pro |
| 155 | | 160 | 165 |
| Pro His Leu Gln | Ile Arg Pro Pro Ser | Gln Asp Leu Lys Asp | Gly |
| 170 | | 175 | 180 |
| Thr Gln Glu Glu | Ala Thr Lys Arg Gln | Glu Ala Pro Val Asp | Pro |
| 185 | | 190 | 195 |
| Arg Pro Glu Gly | Asp Pro Gln Arg Thr | Val Ile Ser Trp Arg | Gly |
| 200 | | 205 | 210 |
| Ala Val Ile Glu | Pro Glu Gln Gly Thr | Glu Leu Pro Ser Arg | Arg |
| 215 | | 220 | 225 |
| Ala Glu Val Pro | Thr Lys Pro Pro Leu | Pro Pro Ala Arg Thr | Gln |
| 230 | | 235 | 240 |
| Gly Thr Pro Val | His Leu Asn Tyr Arg | Gln Lys Gly Val Ile | Asp |
| 245 | | 250 | 255 |
| Val Phe Leu His | Ala Trp Lys Gly Tyr | Arg Lys Phe Ala Trp | Gly |
| 260 | | 265 | 270 |
| His Asp Glu Leu | Lys Pro Val Ser Arg | Ser Phe Ser Glu Trp | Phe |
| 275 | | 280 | 285 |
| Gly Leu Gly Leu | Thr Leu Ile Asp Ala | Leu Asp Thr Met Trp | Ile |
| 290 | | 295 | 300 |
| Leu Gly Leu Arg | Lys Glu Phe Glu Glu | Ala Arg Lys Trp Val | Ser |
| 305 | | 310 | 315 |
| Lys Lys Leu His | Phe Glu Lys Asp Val | Asp Val Asn Leu Phe | Glu |
| 320 | | 325 | 330 |
| Ser Thr Ile Arg | Ile Leu Gly Gly Leu | Leu Ser Ala Tyr His | Leu |
| 335 | | 340 | 345 |
| Ser Gly Asp Ser | Leu Phe Leu Arg Lys | Ala Glu Asp Phe Gly | Asn |
| 350 | | 355 | 360 |
| Arg Leu Met Pro | Ala Phe Arg Thr Pro | Ser Lys Ile Pro Tyr | Ser |
| 365 | | 370 | 375 |
| Asp Val Asn Ile | Gly Thr Gly Val Ala | His Pro Pro Arg Trp | Thr |
| 380 | | 385 | 390 |
| Ser Asp Ser Thr | Val Ala Glu Val Thr | Ser Ile Gln Leu Glu | Phe |

| 395 | 400 | 405 |
|-----------------|---|-----|
| Arg Glu Leu Ser | Arg Leu Thr Gly Asp Lys Lys Phe Gln Glu Ala | |
| 410 | 415 | 420 |
| Val Glu Lys Val | Thr Gln His Ile His Gly Leu Ser Gly Lys Lys | |
| 425 | 430 | 435 |
| Asp Gly Leu Val | Pro Met Phe Ile Asn Thr His Ser Gly Leu Phe | |
| 440 | 445 | 450 |
| Thr His Leu Gly | Val Phe Thr Leu Gly Ala Arg Ala Asp Ser Tyr | |
| 455 | 460 | 465 |
| Tyr Glu Tyr Leu | Leu Lys Gln Trp Ile Gln Gly Gly Lys Gln Glu | |
| 470 | 475 | 480 |
| Thr Gln Leu Leu | Glu Asp Tyr Val Glu Ala Ile Glu Gly Val Arg | |
| 485 | 490 | 495 |
| Thr His Leu Leu | Arg His Ser Glu Pro Ser Lys Leu Thr Phe Val | |
| 500 | 505 | 510 |
| Gly Glu Leu Ala | His Gly Arg Phe Ser Ala Lys Met Asp His Leu | |
| 515 | 520 | 525 |
| Val Cys Phe Leu | Pro Gly Thr Leu Ala Leu Gly Val Tyr His Gly | |
| 530 | 535 | 540 |
| Leu Pro Ala Ser | His Met Glu Leu Ala Gln Glu Leu Met Glu Thr | |
| 545 | 550 | 555 |
| Cys Tyr Gln Met | Asn Arg Gln Met Glu Thr Gly Leu Ser Pro Glu | |
| 560 | 565 | 570 |
| Ile Val His Phe | Asn Leu Tyr Pro Gln Pro Gly Arg Arg Asp Val | |
| 575 | 580 | 585 |
| Glu Val Lys Pro | Ala Asp Arg His Asn Leu Leu Arg Pro Glu Thr | |
| 590 | 595 | 600 |
| Val Glu Ser Leu | Phe Tyr Leu Tyr Arg Val Thr Gly Asp Arg Lys | |
| 605 | 610 | 615 |
| Tyr Gln Asp Trp | Gly Trp Glu Ile Leu Gln Ser Phe Ser Arg Phe | |
| 620 | 625 | 630 |
| Thr Arg Val Pro | Ser Gly Gly Tyr Ser Ser Ile Asn Asn Val Gln | |
| 635 | 640 | 645 |
| Asp Pro Gln Lys | Pro Glu Pro Arg Asp Lys Met Glu Ser Phe Phe | |
| 650 | 655 | 660 |
| Leu Gly Glu Thr | Leu Lys Tyr Leu Phe Leu Leu Phe Ser Asp Asp | |
| 665 | 670 | 675 |
| Pro Asn Leu Leu | Ser Leu Asp Ala Tyr Val Phe Asn Thr Glu Ala | |
| 680 | 685 | 690 |

His Pro Leu Pro Ile Trp Thr Pro Ala
695

<210> 13
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 13
cgccagaagg gcgtgattga cgtc 24

<210> 14
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 14
ccatccttct tcccagacag gccg 24

<210> 15
<211> 44
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-44
<223> Synthetic construct.

<400> 15
gaagcctgtg tccaggtcct tcagtgagtg gtttggcctc ggtc 44

<210> 16
<211> 1524
<212> DNA
<213> Homo sapiens

<400> 16
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cccatgcgcc gccgcctctc cgcacgatgt tcccctcgcg gaggaagcg 100
gcgcagctgc cctgggagga cggcaggtcc gggttgctct ccggcggcct 150
ccctcggaag tgttcogtct tccacctgtt cgtggcctgc ctctcgctgg 200
gctttctctc cctactctgg ctgcagctca gctgctctgg ggacgtggcc 250

cgggcagtcg ggggacaagg gcaggagacc tcgggccctc cccgtgcctg 300
 ccccccagag ccgccccctg agcactggga agaagacgca tcctggggcc 350
 cccaccgcct ggcagtgcctg gtgcccttcc gcgaacgctt cgaggagctc 400
 ctggtcttcg tgccccacat gcgccgcttc ctgagcagga agaagatccg 450
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 cagcgctcat caacgtgggc ttcttgagga gcagcaacag cacggactac 550
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 cccaggcctg tgggtagtgg ggagggtga acaggacaac ctctcatcac 1400
 cctactctga cctccttcac gtgccaggc ctgtgggtag tggggagggc 1450
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 aaaaaaaaaa aaaaaaaaaa aaaa 1524

<210> 17
 <211> 327
 <212> PRT
 <213> Homo sapiens
 <220>

<221> sig_peptide
 <222> 1-42
 <223> Signal peptide.

 <220>
 <221> misc_feature
 <222> 19-25,65-71,247-253,285-291,303-310
 <223> N-myristoylation site.

 <220>
 <221> misc_feature
 <222> 27-31
 <223> cAMP- and cGMP-dependent protein kinase phosphorylation site.

 <220>
 <221> TRANSMEM
 <222> 29-49
 <223> Transmembrane domain (type II).

<220>
 <221> misc_feature
 <222> 154-158
 <223> N-glycosylation site.

 <220>
 <221> misc_feature
 <222> 226-233
 <223> Tyrosine kinase phosphorylation site.

<400> 17
 Met Phe Pro Ser Arg Arg Lys Ala Ala Gln Leu Pro Trp Glu Asp
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 Gly Arg Ser Gly Leu Leu Ser Gly Gly Leu Pro Arg Lys Cys Ser
 20 25 30
 Val Phe His Leu Phe Val Ala Cys Leu Ser Leu Gly Phe Phe Ser
 35 40 45
 Leu Leu Trp Leu Gln Leu Ser Cys Ser Gly Asp Val Ala Arg Ala
 50 55 60
 Val Arg Gly Gln Gly Gln Glu Thr Ser Gly Pro Pro Arg Ala Cys
 65 70 75
 Pro Pro Glu Pro Pro Pro Glu His Trp Glu Glu Asp Ala Ser Trp
 80 85 90
 Gly Pro His Arg Leu Ala Val Leu Val Pro Phe Arg Glu Arg Phe
 95 100 105
 Glu Glu Leu Leu Val Phe Val Pro His Met Arg Arg Phe Leu Ser
 110 115 120
 Arg Lys Lys Ile Arg His His Ile Tyr Val Leu Asn Gln Val Asp
 125 130 135
 His Phe Arg Phe Asn Arg Ala Ala Leu Ile Asn Val Gly Phe Leu

| 140 | 145 | 150 |
|-------------------------------------|---------------------|-----|
| Glu Ser Ser Asn Ser Thr Asp Tyr Ile | Ala Met His Asp Val | Asp |
| 155 | 160 | 165 |
| Leu Leu Pro Leu Asn Glu Glu Leu Asp | Tyr Gly Phe Pro Glu | Ala |
| 170 | 175 | 180 |
| Gly Pro Phe His Val Ala Ser Pro Glu | Leu His Pro Leu Tyr | His |
| 185 | 190 | 195 |
| Tyr Lys Thr Tyr Val Gly Gly Ile Leu | Leu Leu Ser Lys Gln | His |
| 200 | 205 | 210 |
| Tyr Arg Leu Cys Asn Gly Met Ser Asn | Arg Phe Trp Gly Trp | Gly |
| 215 | 220 | 225 |
| Arg Glu Asp Asp Glu Phe Tyr Arg Arg | Ile Lys Gly Ala Gly | Leu |
| 230 | 235 | 240 |
| Gln Leu Phe Arg Pro Ser Gly Ile Thr | Thr Gly Tyr Lys Thr | Phe |
| 245 | 250 | 255 |
| Arg His Leu His Asp Pro Ala Trp Arg | Lys Arg Asp Gln Lys | Arg |
| 260 | 265 | 270 |
| Ile Ala Ala Gln Lys Gln Glu Gln Phe | Lys Val Asp Arg Glu | Gly |
| 275 | 280 | 285 |
| Gly Leu Asn Thr Val Lys Tyr His Val | Ala Ser Arg Thr Ala | Leu |
| 290 | 295 | 300 |
| Ser Val Gly Gly Ala Pro Cys Thr Val | Leu Asn Ile Met Leu | Asp |
| 305 | 310 | 315 |
| Cys Asp Lys Thr Ala Thr Pro Trp Cys | Thr Phe Ser | |
| 320 | 325 | |

<210> 18
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 18
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<210> 19
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence

<222> 1-24
<223> Synthetic construct

<400> 19
gcagtgcggg aagccacatg gtac 24

<210> 20
<211> 46
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

<400> 20
cttcctgagc aggaagaaga tccggcacca catctacgtg ctcaac 46

<210> 21
<211> 494
<212> DNA
<213> Homo sapiens

<400> 21
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gactggtcgg tgcccagaaa gtctcttctg ccaactgacgc ccccatcagg 150
gattgggcct tctttccccc ttcctttctg tgtctcctgc ctcatcggcc 200
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taaacagtta aaagctgaaa aaaaaaaaaa aaaaaaaaaa aaaa 494

<210> 22
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> sig_peptide
<222> 1-15
<223> Signal peptide.

<220>
<221> misc_feature
<222> 3-18

<223> Growth factor and cytokines receptors family.

<400> 22

Met Leu Leu Leu Thr Leu Leu Leu Leu Leu Leu Leu Lys Gly
1 5 10 15
Ser Cys Leu Glu Trp Gly Leu Val Gly Ala Gln Lys Val Ser Ser
20 25 30
Ala Thr Asp Ala Pro Ile Arg Asp Trp Ala Phe Phe Pro Pro Ser
35 40 45
Phe Leu Cys Leu Leu Pro His Arg Pro Ala Met Thr Cys Ser Gln
50 55 60
Ala Gln Pro Arg Gly Glu Gly Glu Lys Val Gly Asp Gly
65 70

<210> 23

<211> 2883

<212> DNA

<213> Homo sapiens

<400> 23

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ccataaggct ccggtcgccg ctgggcccgc gccgcgctcc tgcccggccg 150
ggctccgggg cggcccgcta ggccagtgcg ccgcgcgctc ccccgagggc 200
cccgccccgc agcatggagc cacccgacg ccggcggggc cgcgcgcagc 250
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gaagaatggc tcattttctg ggttaagtct ccttgaaaga ttggacctcc 550
gaaacaatct tattagtagt atagatccag gtgccttctg gggactgtca 600
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atttgttttc ttcattatct caaggaactt ttgattatct tgcgtcatta 750
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gtggatgcat cgctgggtaa aggagaagaa catcacggtg cgggatacca 850

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 agtgcattggc ttcatatatt gatcaggaca tgcaagtgtt gtggtatcag 1050
 gatgggagaa tagttgaaac cgatgaatcg caaggtatctt ttgttgaaaa 1100
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 ttggcgcaga tgtgatagag gtggcttttg ggcagatgat gattattctc 1450
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 atgcccctca atcttaccaa tgccgtggca acagctcgac agttactggc 1550
 ttacactgtg gaagcagcca acttttctga caaaatggat gttatatttg 1600
 tggcagaaat gattgaaaaa tttggaagat ttaccaagga ggaaaaatca 1650
 aaagagctag gtgacgtgat ggttgacatt gcaagtaaca tcatgttggc 1700
 tgatgaacgt gtcctgtggc tggcgcagag ggaagctaaa gcctgcagta 1750
 ggattgtgca gtgtcttcag cgcattgcta cctaccggct agccggtgga 1800
 gctcacgttt attcaacata ttcaccaat attgctctgg aagcttatgt 1850
 catcaagtct actggcttca cggggatgac ctgtaccgtg ttccagaaag 1900
 tggcagcctc tgatcgtaca ggactttcgg attatgggag gcgggatcca 1950
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 ccttattaaa agattttttt ttgcaggaag ataggtatta ttgcttttgc 2150
 tactgtttta aagaaaacta accaggaaga actgcattac gactttcaag 2200
 ggccctaggc atttttgcct ttgattccct ttcttcacat aaaaatatca 2250
 gaaattacat tttataactg cagtgggtata aatgcaaata tactattgtt 2300

acatgtgaaa aaatttttatt tgacttaaaa gtttatttat ttgttttttt 2350
 gtccttgatt ttaagacaat aagatgtttt catggggccc taaaagtatc 2400
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 agaccaggtg tttaatcaag caagctgtat atcaaaattt ttggcagaaa 2500
 acacaaatat gtcatatatc tttttttaaa aaaagtattt cattgaagca 2550
 agcaaaatga aagcattttt actgattttt aaaattggtg ctttagatat 2600
 atttgactac actgtattga agcaaataga ggaggcacia ctccagcacc 2650
 ctaatggaac cacatttttt tctacttagct ttctgtgggc atgtgtaatt 2700
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 tcaataatat cacaacaat attccagtca ttttaatggc tgcataataa 2800
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 tattgaatga atgaacgaaa aaaaaaaaaa aaa 2883

<210> 24
 <211> 616
 <212> PRT
 <213> Homo sapiens

<220>
 <221> sig_peptide
 <222> 1-33
 <223> Signal peptide.

<220>
 <221> TRANSMEM
 <222> 13-40
 <223> Transmembrane domain (type II).

<400> 24
 Met Glu Pro Pro Gly Arg Arg Arg Gly Arg Ala Gln Pro Pro Leu
 1 5 10 15
 Leu Leu Pro Leu Ser Leu Leu Ala Leu Leu Ala Leu Leu Gly Gly
 20 25 30
 Gly Gly Gly Gly Gly Ala Ala Ala Leu Pro Ala Gly Cys Lys His
 35 40 45
 Asp Gly Arg Pro Arg Gly Ala Gly Arg Ala Ala Gly Ala Ala Glu
 50 55 60
 Gly Lys Val Val Cys Ser Ser Leu Glu Leu Ala Gln Val Leu Pro
 65 70 75
 Pro Asp Thr Leu Pro Asn Arg Thr Val Thr Leu Ile Leu Ser Asn
 80 85 90

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Asn Lys Ile Ser | Glu Leu Lys Asn Gly | Ser Phe Ser Gly Leu Ser | 95 | 100 | 105 |
| Leu Leu Glu Arg | Leu Asp Leu Arg Asn | Asn Leu Ile Ser Ser Ile | 110 | 115 | 120 |
| Asp Pro Gly Ala | Phe Trp Gly Leu Ser | Ser Leu Lys Arg Leu Asp | 125 | 130 | 135 |
| Leu Thr Asn Asn | Arg Ile Gly Cys Leu | Asn Ala Asp Ile Phe Arg | 140 | 145 | 150 |
| Gly Leu Thr Asn | Leu Val Arg Leu Asn | Leu Ser Gly Asn Leu Phe | 155 | 160 | 165 |
| Ser Ser Leu Ser | Gln Gly Thr Phe Asp | Tyr Leu Ala Ser Leu Arg | 170 | 175 | 180 |
| Ser Leu Glu Phe | Gln Thr Glu Tyr Leu | Leu Cys Asp Cys Asn Ile | 185 | 190 | 195 |
| Leu Trp Met His | Arg Trp Val Lys Glu | Lys Asn Ile Thr Val Arg | 200 | 205 | 210 |
| Asp Thr Arg Cys | Val Tyr Pro Lys Ser | Leu Gln Ala Gln Pro Val | 215 | 220 | 225 |
| Thr Gly Val Lys | Gln Glu Leu Leu Thr | Cys Asp Pro Pro Leu Glu | 230 | 235 | 240 |
| Leu Pro Ser Phe | Tyr Met Thr Pro Ser | His Arg Gln Val Val Phe | 245 | 250 | 255 |
| Glu Gly Asp Ser | Leu Pro Phe Gln Cys | Met Ala Ser Tyr Ile Asp | 260 | 265 | 270 |
| Gln Asp Met Gln | Val Leu Trp Tyr Gln | Asp Gly Arg Ile Val Glu | 275 | 280 | 285 |
| Thr Asp Glu Ser | Gln Gly Ile Phe Val | Glu Lys Asn Met Ile His | 290 | 295 | 300 |
| Asn Cys Ser Leu | Ile Ala Ser Ala Leu | Thr Ile Ser Asn Ile Gln | 305 | 310 | 315 |
| Ala Gly Ser Thr | Gly Asn Trp Gly Cys | His Val Gln Thr Lys Arg | 320 | 325 | 330 |
| Gly Asn Asn Thr | Arg Thr Val Asp Ile | Val Val Leu Glu Ser Ser | 335 | 340 | 345 |
| Ala Gln Tyr Cys | Pro Pro Glu Arg Val | Val Asn Asn Lys Gly Asp | 350 | 355 | 360 |
| Phe Arg Trp Pro | Arg Thr Leu Ala Gly | Ile Thr Ala Tyr Leu Gln | 365 | 370 | 375 |
| Cys Thr Arg Asn | Thr His Gly Ser Gly | Ile Tyr Pro Gly Asn Pro | | | |

| 380 | 385 | 390 |
|-------------------------------------|-------------------------|-----|
| Gln Asp Glu Arg Lys Ala Trp Arg Arg | Cys Asp Arg Gly Gly Phe | |
| 395 | 400 | 405 |
| Trp Ala Asp Asp Asp Tyr Ser Arg Cys | Gln Tyr Ala Asn Asp Val | |
| 410 | 415 | 420 |
| Thr Arg Val Leu Tyr Met Phe Asn Gln | Met Pro Leu Asn Leu Thr | |
| 425 | 430 | 435 |
| Asn Ala Val Ala Thr Ala Arg Gln Leu | Leu Ala Tyr Thr Val Glu | |
| 440 | 445 | 450 |
| Ala Ala Asn Phe Ser Asp Lys Met Asp | Val Ile Phe Val Ala Glu | |
| 455 | 460 | 465 |
| Met Ile Glu Lys Phe Gly Arg Phe Thr | Lys Glu Glu Lys Ser Lys | |
| 470 | 475 | 480 |
| Glu Leu Gly Asp Val Met Val Asp Ile | Ala Ser Asn Ile Met Leu | |
| 485 | 490 | 495 |
| Ala Asp Glu Arg Val Leu Trp Leu Ala | Gln Arg Glu Ala Lys Ala | |
| 500 | 505 | 510 |
| Cys Ser Arg Ile Val Gln Cys Leu Gln | Arg Ile Ala Thr Tyr Arg | |
| 515 | 520 | 525 |
| Leu Ala Gly Gly Ala His Val Tyr Ser | Thr Tyr Ser Pro Asn Ile | |
| 530 | 535 | 540 |
| Ala Leu Glu Ala Tyr Val Ile Lys Ser | Thr Gly Phe Thr Gly Met | |
| 545 | 550 | 555 |
| Thr Cys Thr Val Phe Gln Lys Val Ala | Ala Ser Asp Arg Thr Gly | |
| 560 | 565 | 570 |
| Leu Ser Asp Tyr Gly Arg Arg Asp Pro | Glu Gly Asn Leu Asp Lys | |
| 575 | 580 | 585 |
| Gln Leu Ser Phe Lys Cys Asn Val Ser | Asn Thr Phe Ser Ser Leu | |
| 590 | 595 | 600 |
| Ala Leu Lys Val Cys Tyr Ile Leu Gln | Ser Phe Lys Thr Ile Tyr | |
| 605 | 610 | 615 |

Ser

<210> 25

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct

<400> 25

gaggactcac caatctggtt cggc 24

<210> 26

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 26

aactggaaaag gaaggctgtc tccc 24

<210> 27

<211> 50

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-50

<223> Synthetic construct.

<400> 27

gtaaaggaga agaacatcac ggtacgggat accaggtgtg tttatcctaa 50

<210> 28

<211> 683

<212> DNA

<213> Homo sapiens

<400> 28

gcgtggggat gtctaggagc tcgaagggtg tgctgggcct ctcggtgctg 50

ctgacggcgg ccacagtggc cggcgtacat gtgaagcagc agtgggacca 100

gcagaggctt cgtgacggag ttatcagaga cattgagagg caaattcgga 150

aaaaagaaaa cattcgtctt ttgggagAAC agattatTTT gactgagcaa 200

cttgaagcag aaagagagaa gatgttattg gcaaaaggat ctcaaaaatc 250

atgacttgaa tgtgaaatat ctgttggaca gacaacacga gtttgtgtgt 300

gtgtgttgat ggagagtagc ttagtagtat cttcatcttt ttttttggtc 350

actgtccttt taaacttgat caaataaagg acagtgggtc atataagtta 400

ctgctttcag ggtcccttat atctgaataa aggagtgtgg gcagacactt 450

tttggagag tctgtctggg tgatcctggt agaagcccca ttagggtcac 500

tgtccagtgc ttagggttgt tactgagaag cactgccgag cttgtgagaa 550

ggaagggatg gatagtagca tccacctgag tagtctgac agtcggcatg 600
 atgacgaagc cacgagaaca tcgacctcag aaggactgga ggaaggtgaa 650
 gtggagggag agacgctcct gatcgtcgaa tcc 683

<210> 29
 <211> 81
 <212> PRT
 <213> Homo sapiens

<220>
 <221> sig_peptide
 <222> 1-21
 <223> Signal peptide.

<400> 29
 Met Ser Arg Ser Ser Lys Val Val Leu Gly Leu Ser Val Leu Leu
 1 5 10 15
 Thr Ala Ala Thr Val Ala Gly Val His Val Lys Gln Gln Trp Asp
 20 25 30
 Gln Gln Arg Leu Arg Asp Gly Val Ile Arg Asp Ile Glu Arg Gln
 35 40 45
 Ile Arg Lys Lys Glu Asn Ile Arg Leu Leu Gly Glu Gln Ile Ile
 50 55 60
 Leu Thr Glu Gln Leu Glu Ala Glu Arg Glu Lys Met Leu Leu Ala
 65 70 75
 Lys Gly Ser Gln Lys Ser
 80

<210> 30
 <211> 2128
 <212> DNA
 <213> Homo sapiens

<400> 30
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 tacagcctgt tccaagtgtg gcttaatccg tctccaccac cagatctttc 100
 tccgtggatt cctctgctaa gaccgctgcc atgccagtga cggtaaccgc 150
 caccaccatc acaaccacca cgacgtcatc ttcgggcctg ggggtcccca 200
 tgatcgtggg gtcccctcgg gccctgacac agcccctggg tctccttcgc 250
 ctgctgcagc tgggtgtctac ctgcgtggcc ttctogctgg tggctagcgt 300
 gggcgccctg acgggggtcca tgggcaactg gtccatgttc acctggtgct 350
 tctgcttctc cgtgaccctg atcatcctca tcgtggagct gtgcgggctc 400
 caggcccgct tccccctgtc ttggcgcaac ttccccatca ccttcgcctg 450

ctatgcggcc ctcttctgcc tctcggcctc catcatctac cccaccacct 500
 atgtccagtt cctgtccac ggccgttcgc gggaccacgc catcgccgcc 550
 accttcttct cctgcatcgc gtgtgtggct tacgccaccg aagtggcctg 600
 gacccgggccc cggcccgccg agatcactgg ctatatggcc accgtacccg 650
 ggctgctgaa ggtgctggag accttcgttg cctgcatcat cttcgcgttc 700
 atcagcgacc ccaacctgta ccagcaccag ccggccctgg agtgggtgcgt 750
 ggcggtgtac gccatctgct tcctcctagc ggccatcgcc atcctgctga 800
 acctggggga gtgcaccaac gtgctacca tccccttccc cagcttcctg 850
 tcggggctgg ccttgctgtc tgtcctcctc tatgccaccg cccttgttct 900
 ctggccctc taccagttcg atgagaagta tggcggccag cctcggcgt 950
 cgagagatgt aagctgcagc cgcagccatg cctactacgt gtgtgcctgg 1000
 gaccgccgac tggctgtggc catcctgacg gccatcaacc tactggcgta 1050
 tgtggctgac ctggtgact ctgccacct ggtttttgtc aagggtctaag 1100
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 ccgagtttcc tttatggagt acttcttcc tccgccttc ctctgttttc 1200
 ctcttctgt ctcccctccc tccaccttt ttctttcctt cccaattcct 1250
 tgcactctaa ccagttcttg gatgcatctt ctccctccc ttctctcttg 1300
 ctgtttcctt cctgtgttgt tttgttgccc acatcctgtt ttcacccctg 1350
 agctgtttct cttttcttt tctttcttt ttttttttt ttttaagacg 1400
 gattctcact ctgtggccca ggctggagt cagtgggtgc atctcagctc 1450
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 caagtagctg ggaggacag tgtgagctgc cgcaccacgc ctgtttctct 1550
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 gtgtgtgtgt gtgtgtgttt ggggggtgg ggggtggtag ctggggattg 1850
 ggccctcttt ctccagtg aggaaggtgt gcagtgtact tcccctttaa 1900

attaaaaaac atatatatat atatatttgg aggtcagtaa tttccaatgg 1950
 gcgggaggca ttaagcaccg accctgggtc cctaggcccc gcctggcact 2000
 cagccttgcc agagattggc tccagaattd ttgccaggct tacagaacac 2050
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 cccaactatt ctctgtggta tgaaaaag 2128

<210> 31
 <211> 322
 <212> PRT
 <213> Homo sapiens

<400> 31
 Met Pro Val Thr Val Thr Arg Thr Thr Ile Thr Thr Thr Thr Thr
 1 5 10 15
 Ser Ser Ser Gly Leu Gly Ser Pro Met Ile Val Gly Ser Pro Arg
 20 25 30
 Ala Leu Thr Gln Pro Leu Gly Leu Leu Arg Leu Leu Gln Leu Val
 35 40 45
 Ser Thr Cys Val Ala Phe Ser Leu Val Ala Ser Val Gly Ala Trp
 50 55 60
 Thr Gly Ser Met Gly Asn Trp Ser Met Phe Thr Trp Cys Phe Cys
 65 70 75
 Phe Ser Val Thr Leu Ile Ile Leu Ile Val Glu Leu Cys Gly Leu
 80 85 90
 Gln Ala Arg Phe Pro Leu Ser Trp Arg Asn Phe Pro Ile Thr Phe
 95 100 105
 Ala Cys Tyr Ala Ala Leu Phe Cys Leu Ser Ala Ser Ile Ile Tyr
 110 115 120
 Pro Thr Thr Tyr Val Gln Phe Leu Ser His Gly Arg Ser Arg Asp
 125 130 135
 His Ala Ile Ala Ala Thr Phe Phe Ser Cys Ile Ala Cys Val Ala
 140 145 150
 Tyr Ala Thr Glu Val Ala Trp Thr Arg Ala Arg Pro Gly Glu Ile
 155 160 165
 Thr Gly Tyr Met Ala Thr Val Pro Gly Leu Leu Lys Val Leu Glu
 170 175 180
 Thr Phe Val Ala Cys Ile Ile Phe Ala Phe Ile Ser Asp Pro Asn
 185 190 195
 Leu Tyr Gln His Gln Pro Ala Leu Glu Trp Cys Val Ala Val Tyr
 200 205 210

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Ile | Cys | Phe | Ile | Leu | Ala | Ala | Ile | Ala | Ile | Leu | Leu | Asn | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Glu | Cys | Thr | Asn | Val | Leu | Pro | Ile | Pro | Phe | Pro | Ser | Phe | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ser | Gly | Leu | Ala | Leu | Leu | Ser | Val | Leu | Leu | Tyr | Ala | Thr | Ala | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Leu | Trp | Pro | Leu | Tyr | Gln | Phe | Asp | Glu | Lys | Tyr | Gly | Gly | Gln | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Pro | Arg | Arg | Ser | Arg | Asp | Val | Ser | Cys | Ser | Arg | Ser | His | Ala | Tyr | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Tyr | Val | Cys | Ala | Trp | Asp | Arg | Arg | Leu | Ala | Val | Ala | Ile | Leu | Thr | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ala | Ile | Asn | Leu | Leu | Ala | Tyr | Val | Ala | Asp | Leu | Val | His | Ser | Ala | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| His | Leu | Val | Phe | Val | Lys | Val | | | | | | | | | |
| | | | | 320 | | | | | | | | | | | |

<210> 32
 <211> 3680
 <212> DNA
 <213> Homo sapiens

<400> 32
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 tttcaccatg ttggccaggc tggctcttgaa ctcgtgacct catgatccgc 100
 tcacctcggc ctcccaaagt gctgggatta caggcatgag ccaactgacgc 150
 ctggccagcc tatgcatttt taagaaatta ttctgtatta ggtgctgtgc 200
 taaacattgg gcactacagt gaccaaaca gactgaattc cccaagagcc 250
 aaagaccagt gagggagacc aacaagaaac aggaaatgca aaagagacca 300
 ttattactca ctatgactaa gggtcacaaa tggggtaoct tgatggagag 350
 tgatttgta agagactaca gagggaggac agactaccaa gaggggggcc 400
 aggaaagctc ctctgacgag gtggtatttc agcccaaact ggaagaatga 450
 gaaagagcta gccagccatc agaatagtcc agaagagatg gggagcacta 500
 cactcactac actttggcct gagaaaatag catgggattg gaggaggctg 550
 ggggaacacc acttctgccg acctgggcag gaggcattga gggcttgaga 600
 aagggcaatg gcagtagcag tagaaaggac agggtaggag cagggacttt 650
 gcaggtgga tcattaggtc ttatcaacag atatgggcaa gcaaagccag 700

gggagaattg atggtaatgc tgaggtttgg agccaggcta gatgggacag 750
 tgggtgggtga tgcaaaggaa agaggtcagg aagcagggcc agacgtgggg 800
 agaaggtgtg ggggttttgt ttccatcttg ccgagtctgc cggaatgtgg 850
 atgggaagac caagaggagg agcaaggggc agaggggaag ggaatcttaa 900
 agaagtcttg gatgccacac tcttcttctt tctctctctt cctctctctc 950
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 ggggtgctgg aaagtggagg attagctgaa gttttgcttc tcggggcctg 1050
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 cttatcatct tacatttccc tgtagccact gggacatatg tgggttctct 1150
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 caaggtgaat gttggagaca cagtcgcgat gctgcccaag tcccggcgag 1300
 ccctaactat ccaggagatc gctgcgctgg ccaggctctc cctgcatggt 1350
 atgcagcccc tcccatgttt ctggccactt tgtcctttct cctcccgttt 1400
 gcacatccct ttggaactgt ttctgtgag tacatgctgg ggtctcccct 1450
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 ctggcctggt cctttaccag gcttctccac cctcccctat ctccaggtat 1600
 ttcccagggt gtgaaggacc acgtgaccaa gcctaccgcc atggcccagg 1650
 gccgagtggc tcacctcatt gagtggaaagg gctggagcaa gccgagtgac 1700
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 ggctggggcag ctgcccctgg ggccgcacct ccaggacctg ttcaccggcc 1950
 accggttctc ccggcctgtg cgccagggct ccgtggagcc tgagagcgac 2000
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| | Y718A | Y719B | Y720C | Y721D | Y722E | Y723F | Y724G | Y725H | Y726I | Y727J | Y728K | Y729L | Y730M | Y731N | Y732O | Y733P | Y734Q | Y735R | Y736S | Y737T | Y738U | Y739V | Y740W | Y741X | Y742Y | Y743Z | Y744AA | Y745AB | Y746AC | Y747AD | Y748AE | Y749AF | Y750AG | Y751AH | Y752AI | Y753AJ | Y754AK | Y755AL | Y756AM | Y757AN | Y758AO | Y759AP | Y760AQ | Y761AR | Y762AS | Y763AT | Y764AU | Y765AV | Y766AW | Y767AX | Y768AY | Y769AZ | Y770BA | Y771BB | Y772BC | Y773BD | Y774BE | Y775BF | Y776BG | Y777BH | Y778BI | Y779BJ | Y780BK | Y781BL | Y782BM | Y783BN | Y784BO | Y785BP | Y786BQ | Y787BR | Y788BS | Y789BT | Y790BU | Y791BV | Y792BW | Y793BX | Y794BY | Y795BZ | Y796CA | Y797CB | Y798CC | Y799CD | Y800CE | Y801CF | Y802CG | Y803CH | Y804CI | Y805CJ | Y806CK | Y807CL | Y808CM | Y809CN | Y810CO | Y811CP | Y812CQ | Y813CR | Y814CS | Y815CT | Y816CU | Y817CV | Y818CW | Y819CX | Y820CY | Y821CZ | Y822DA | Y823DB | Y824DC | Y825DD | Y826DE | Y827DF | Y828DG | Y829DH | Y830DI | Y831DJ | Y832DK | Y833DL | Y834DM | Y835DN | Y836DO | Y837DP | Y838DQ | Y839DR | Y840DS | Y841DT | Y842DU | Y843DV | Y844DW | Y845DX | Y846DY | Y847DZ | Y848EA | Y849EB | Y850EC | Y851ED | Y852EE | Y853EF | Y854EG | Y855EH | Y856EI | Y857EJ | Y858EK | Y859EL | Y860EM | Y861EN | Y862EO | Y863EP | Y864EQ | Y865ER | Y866ES | Y867ET | Y868EU | Y869EV | Y870EW | Y871EX | Y872EY | Y873EZ | Y874FA | Y875FB | Y876FC | Y877FD | Y878FE | Y879FF | Y880FG | Y881FH | Y882FI | Y883FJ | Y884FK | Y885FL | Y886FM | Y887FN | Y888FO | Y889FP | Y890FQ | Y891FR | Y892FS | Y893FT | Y894FU | Y895FV | Y896FW | Y897FX | Y898FY | Y899FZ | Y900GA | Y901GB | Y902GC | Y903GD | Y904GE | Y905GF | Y906GG | Y907GH | Y908GI | Y909GJ | Y910GK | Y911GL | Y912GM | Y913GN | Y914GO | Y915GP | Y916GQ | Y917GR | Y918GS | Y919GT | Y920GU | Y921GV | Y922GW | Y923GX | Y924GY | Y925GZ | Y926HA | Y927HB | Y928HC | Y929HD | Y930HE | Y931HF | Y932HG | Y933HH | Y934HI | Y935HJ | Y936HK | Y937HL | Y938HM | Y939HN | Y940HO | Y941HP | Y942HQ | Y943HR | Y944HS | Y945HT | Y946HU | Y947HV | Y948HW | Y949HX | Y950HY | Y951HZ | Y952IA | Y953IB | Y954IC | Y955ID | Y956IE | Y957IF | Y958IG | Y959IH | Y960II | Y961IJ | Y962IK | Y963IL | Y964IM | Y965IN | Y966IO | Y967IP | Y968IQ | Y969IR | Y970IS | Y971IT | Y972IU | Y973IV | Y974IW | Y975IX | Y976IY | Y977IZ | Y978JA | Y979JB | Y980JC | Y981JD | Y982JE | Y983JF | Y984JG | Y985JH | Y986JI | Y987JJ | Y988JK | Y989JL | Y990JM | Y991JN | Y992JO | Y993JP | Y994JQ | Y995JR | Y996JS | Y997JT | Y998JU | Y999JV | Y1000JW | Y1001JX | Y1002JY | Y1003JZ | Y1004KA | Y1005KB | Y1006KC | Y1007KD | Y1008KE | Y1009KF | Y1010KG | Y1011KH | Y1012KI | Y1013KJ | Y1014KK | Y1015KL | Y1016KM | Y1017KN | Y1018KO | Y1019KP | Y1020KQ | Y1021KR | Y1022KS | Y1023KT | Y1024KU | Y1025KV | Y1026KW | Y1027KX | Y1028KY | Y1029KZ | Y1030LA | Y1031LB | Y1032LC | Y1033LD | Y1034LE | Y1035LF | Y1036LG | Y1037LH | Y1038LI | Y1039LJ | Y1040LK | Y1041LL | Y1042LM | Y1043LN | Y1044LO | Y1045LP | Y1046LQ | Y1047LR | Y1048LS | Y1049LT | Y1050LU | Y1051LV | Y1052LW | Y1053LX | Y1054LY | Y1055LZ | Y1056MA | Y1057MB | Y1058MC | Y1059MD | Y1060ME | Y1061MF | Y1062MG | Y1063MH | Y1064MI | Y1065MJ | Y1066MK | Y1067ML | Y1068MM | Y1069MN | Y1070MO | Y1071MP | Y1072MQ | Y1073MR | Y1074MS | Y1075MT | Y1076MU | Y1077MV | Y1078MW | Y1079MX | Y1080MY | Y1081MZ | Y1082NA | Y1083NB | Y1084NC | Y1085ND | Y1086NE | Y1087NF | Y1088NG | Y1089NH | Y1090NI | Y1091NJ | Y1092NK | Y1093NL | Y1094NM | Y1095NN | Y1096NO | Y1097NP | Y1098NQ | Y1099NR | Y1100NS | Y1101NT | Y1102NU | Y1103NV | Y1104NW | Y1105NX | Y1106NY | Y1107NZ | Y1108OA | Y1109OB | Y1110OC |
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taatataaaaa atctttgtaa atctctaaaa 3680

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<211> 335

<212> PRT

<213> Homo sapiens

<400> 33

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20 25 30

Ser Leu Ala Gln Val Asn Leu Ser Pro Phe Ser His Pro Lys Val
35 40 45

His Met Asp Pro Asn Tyr Cys His Pro Ser Thr Ser Leu His Leu
50 55 60

Cys Ser Leu Ala Trp Ser Phe Thr Arg Leu Leu His Pro Pro Leu
65 70 75

Ser Pro Gly Ile Ser Gln Val Val Lys Asp His Val Thr Lys Pro
80 85 90

Thr Ala Met Ala Gln Gly Arg Val Ala His Leu Ile Glu Trp Lys
95 100 105

Gly Trp Ser Lys Pro Ser Asp Ser Pro Ala Ala Leu Glu Ser Ala
110 115 120

Phe Ser Ser Tyr Ser Asp Leu Ser Glu Gly Glu Gln Glu Ala Arg
125 130 135

Phe Ala Ala Gly Val Ala Glu Gln Phe Ala Ile Ala Glu Ala Lys
140 145 150

Leu Arg Ala Trp Ser Ser Val Asp Gly Glu Asp Ser Thr Asp Asp
155 160 165

Ser Tyr Asp Glu Asp Phe Ala Gly Gly Met Asp Thr Asp Met Ala
170 175 180

Gly Gln Leu Pro Leu Gly Pro His Leu Gln Asp Leu Phe Thr Gly
185 190 195

His Arg Phe Ser Arg Pro Val Arg Gln Gly Ser Val Glu Pro Glu
200 205 210

Ser Asp Cys Ser Gln Thr Val Ser Pro Asp Thr Leu Cys Ser Ser
215 220 225

Leu Cys Ser Leu Glu Asp Gly Leu Leu Gly Ser Pro Ala Arg Leu
230 235 240

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Gln | Leu | Leu | Gly | Asp | Glu | Leu | Leu | Leu | Ala | Lys | Leu | Pro |
| | | | 245 | | | | | | 250 | | | | | 255 |
| Pro | Ser | Arg | Glu | Ser | Ala | Phe | Arg | Ser | Leu | Gly | Pro | Leu | Glu | Ala |
| | | | 260 | | | | | | 265 | | | | | 270 |
| Gln | Asp | Ser | Leu | Tyr | Asn | Ser | Pro | Leu | Thr | Glu | Ser | Cys | Leu | Ser |
| | | | 275 | | | | | | 280 | | | | | 285 |
| Pro | Ala | Glu | Glu | Glu | Pro | Ala | Pro | Cys | Lys | Asp | Cys | Gln | Pro | Leu |
| | | | 290 | | | | | | 295 | | | | | 300 |
| Cys | Pro | Pro | Leu | Thr | Gly | Ser | Trp | Glu | Arg | Gln | Arg | Gln | Ala | Ser |
| | | | 305 | | | | | | 310 | | | | | 315 |
| Asp | Leu | Ala | Ser | Ser | Gly | Val | Val | Ser | Leu | Asp | Glu | Asp | Glu | Ala |
| | | | 320 | | | | | | 325 | | | | | 330 |
| Glu | Pro | Glu | Glu | Gln | | | | | | | | | | |
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<220>
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<210> 35
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<212> DNA
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<400> 36

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<211> 23

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<223> Synthetic construct.

<400> 37

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<210> 38

<211> 39

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-39

<223> Synthetic construct.

<400> 38

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<210> 39

<211> 22

<212> DNA

<213> Artificial

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<222> 1-22

<223> Synthetic construct.

<400> 39

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<210> 40

<211> 2084

<212> DNA

<213> Homo sapiens

<400> 40

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ccatctgttt tctctaattgc acgacagatt cctttcagac aggacaactg 150

tgatatattca gttcctgatt gtaaatacct cctaagcctg aagcttctgt 200

tactagccat tgtgagcttc agttttcttca tctgcaaaat gggcataata 250

caatctattc ttgccacatc aagggattgt tattccttta aaaaaaacc 300

attgaaaggg tgcttttttaa agaaaatttg acttaaagct aaaaagagga 1800
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gcccaactgag ttatgaagct gacaatgact gcattcaacg gggccatggc 1950
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<210> 41

<211> 334

<212> PRT

<213> Homo sapiens

<400> 41

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Ala | Leu | Ala | Lys | Ile | Leu | Leu | Ile | Ser | Thr | Leu | Phe | Tyr | 1 | 5 | 10 | 15 |
| Ser | Leu | Leu | Ser | Gly | Ser | His | Gly | Lys | Glu | Asn | Gln | Asp | Ile | Asn | 20 | 25 | 30 | |
| Thr | Thr | Gln | Asn | Ile | Ala | Glu | Val | Phe | Lys | Thr | Met | Glu | Asn | Lys | 35 | 40 | 45 | |
| Pro | Ile | Ser | Leu | Glu | Ser | Glu | Ala | Asn | Leu | Asn | Ser | Asp | Lys | Glu | 50 | 55 | 60 | |
| Asn | Ile | Thr | Thr | Ser | Asn | Leu | Lys | Ala | Ser | His | Ser | Pro | Pro | Leu | 65 | 70 | 75 | |
| Asn | Leu | Pro | Asn | Asn | Ser | His | Gly | Ile | Thr | Asp | Phe | Ser | Ser | Asn | 80 | 85 | 90 | |
| Ser | Ser | Ala | Glu | His | Ser | Leu | Gly | Ser | Leu | Lys | Pro | Thr | Ser | Thr | 95 | 100 | 105 | |
| Ile | Ser | Thr | Ser | Pro | Pro | Leu | Ile | His | Ser | Phe | Val | Ser | Lys | Val | 110 | 115 | 120 | |
| Pro | Trp | Asn | Ala | Pro | Ile | Ala | Asp | Glu | Asp | Leu | Leu | Pro | Ile | Ser | 125 | 130 | 135 | |
| Ala | His | Pro | Asn | Ala | Thr | Pro | Ala | Leu | Ser | Ser | Glu | Asn | Phe | Thr | 140 | 145 | 150 | |
| Trp | Ser | Leu | Val | Asn | Asp | Thr | Val | Lys | Thr | Pro | Asp | Asn | Ser | Ser | 155 | 160 | 165 | |
| Ile | Thr | Val | Ser | Ile | Leu | Ser | Ser | Glu | Pro | Thr | Ser | Pro | Ser | Val | 170 | 175 | 180 | |
| Thr | Pro | Leu | Ile | Val | Glu | Pro | Ser | Gly | Trp | Leu | Thr | Thr | Asn | Ser | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ser | Phe | Thr | Gly | Phe | Thr | Pro | Tyr | Gln | Glu | Lys | Thr | Thr | Leu | 200 | 205 | 210 |
| Gln | Pro | Thr | Leu | Lys | Phe | Thr | Asn | Asn | Ser | Lys | Leu | Phe | Pro | Asn | 215 | 220 | 225 |
| Thr | Ser | Asp | Pro | Gln | Lys | Glu | Asn | Arg | Asn | Thr | Gly | Ile | Val | Phe | 230 | 235 | 240 |
| Gly | Ala | Ile | Leu | Gly | Ala | Ile | Leu | Gly | Val | Ser | Leu | Leu | Thr | Leu | 245 | 250 | 255 |
| Val | Gly | Tyr | Leu | Leu | Cys | Gly | Lys | Arg | Lys | Thr | Asp | Ser | Phe | Ser | 260 | 265 | 270 |
| His | Arg | Arg | Leu | Tyr | Asp | Asp | Arg | Asn | Glu | Pro | Val | Leu | Arg | Leu | 275 | 280 | 285 |
| Asp | Asn | Ala | Pro | Glu | Pro | Tyr | Asp | Val | Ser | Phe | Gly | Asn | Ser | Ser | 290 | 295 | 300 |
| Tyr | Tyr | Asn | Pro | Thr | Leu | Asn | Asp | Ser | Ala | Met | Pro | Glu | Ser | Glu | 305 | 310 | 315 |
| Glu | Asn | Ala | Arg | Asp | Gly | Ile | Pro | Met | Asp | Asp | Ile | Pro | Pro | Leu | 320 | 325 | 330 |

Arg Thr Ser Val

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 <211> 1594
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 ctgagccgca cggtcagaac tcagatactg accggcaagg agctccgagt 200
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 ttagtaacct tggcatcttt atttaccac tttgcaataa cagaaagtcc 750
 ttccgccttc gtgcgagaga cctcttgctg ggtttcaaca aacgtgccat 800
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<211> 263

<212> PRT

<213> Homo sapiens

<400> 43

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Lys | Ile | Ala | Phe | Asn | Thr | Pro | Thr | Ala | Val | Gln | Lys | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ala | Arg | Gln | Asp | Val | Glu | Ala | Leu | Leu | Ser | Arg | Thr | Val | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gln | Ile | Leu | Thr | Gly | Lys | Glu | Leu | Arg | Val | Ala | Thr | Gln | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Glu | Gly | Ser | Ser | Gly | Arg | Cys | Met | Leu | Thr | Leu | Leu | Gly | Leu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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| Phe Phe Asp Ser Glu Asp Pro Ala Asn | Ser Leu Arg Gly Gly Glu | |
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| Asp Asn Ile Ala Ile Ile Asp Val Pro | Val Pro Ser Phe Ser Asp | |
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| Ser Asp Pro Ala Ala Ile Ile His Asp | Phe Glu Lys Gly Met Thr | |
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| Ala Tyr Leu Asp Leu Leu Leu Gly Asn | Cys Tyr Leu Met Pro Leu | |
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| Asn Thr Ser Ile Val Met Pro Pro Lys | Asn Leu Val Glu Leu Phe | |
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| Gly Lys Leu Ala Ser Gly Arg Tyr Leu | Pro Gln Thr Tyr Val Val | |
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| Arg Glu Asp Leu Val Ala Val Glu Glu | Ile Arg Asp Val Ser Asn | |
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| Leu Gly Ile Phe Ile Tyr Gln Leu Cys | Asn Asn Arg Lys Ser Phe | |
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| Arg Leu Arg Arg Arg Asp Leu Leu Leu | Gly Phe Asn Lys Arg Ala | |
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| Met | Val | Ser | Ala | Ala | Ala | Pro | Ser | Leu | Leu | Ile | Leu | Leu | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Gly | Ser | Val | Pro | Ala | Thr | Asp | Ala | Arg | Ser | Val | Pro | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ala | Thr | Phe | Leu | Glu | Asp | Val | Ala | Gly | Ser | Gly | Glu | Ala | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Ser | Ala | Ser | Ser | Pro | Ser | Leu | Pro | Pro | Pro | Trp | Thr | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Ser | Pro | Thr | Ser | Met | Gly | Pro | Gln | Pro | Thr | Thr | Leu | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Ser | Pro | Pro | Thr | Asn | Phe | Leu | Asp | Gly | Ile | Val | Asp | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Arg | Gln | Tyr | Val | Met | Leu | Ile | Ala | Val | Val | Gly | Ser | Leu | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Leu | Met | Phe | Ile | Val | Cys | Ala | Ala | Val | Ile | Thr | Arg | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gln | Lys | Ala | Ser | Ala | Tyr | Tyr | Pro | Ser | Ser | Phe | Pro | Lys | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Tyr | Val | Asp | Gln | Ser | Asp | Arg | Ala | Gly | Gly | Pro | Arg | Ala | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Val | Pro | Asp | Arg | Ala | Pro | Asp | Ser | Arg | Pro | Glu | Glu | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asp | Ser | Ser | Arg | Gln | Leu | Gln | Ala | Asp | Ile | Leu | Ala | Ala | Thr | 170 | 175 | 180 |
| Gln | Asn | Leu | Lys | Ser | Pro | Thr | Arg | Ala | Ala | Leu | Gly | Gly | Gly | Asp | 185 | 190 | 195 |
| Gly | Ala | Arg | Met | Val | Glu | Gly | Arg | Gly | Ala | Glu | Glu | Glu | Glu | Lys | 200 | 205 | 210 |
| Gly | Ser | Gln | Glu | Gly | Asp | Gln | Glu | Val | Gln | Gly | His | Gly | Val | Pro | 215 | 220 | 225 |
| Val | Glu | Thr | Pro | Glu | Ala | Gln | Glu | Glu | Pro | Cys | Ser | Gly | Val | Leu | 230 | 235 | 240 |
| Glu | Gly | Ala | Val | Val | Ala | Gly | Glu | Gly | Gln | Gly | Glu | Leu | Glu | Gly | 245 | 250 | 255 |
| Ser | Leu | Leu | Leu | Ala | Gln | Glu | Ala | Gln | Gly | Pro | Val | Gly | Pro | Pro | 260 | 265 | 270 |
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| 50 | | | | | 55 | | | | | 60 | | | | |
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| Gly | Ala | Ala | Gly | Ser | Lys | Val | Ser | Glu | Ala | Leu | Gly | Gln | Gly | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Arg | Glu | Ala | Val | Gly | Thr | Gly | Val | Arg | Gln | Val | Pro | Gly | Phe | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ala | Ala | Asp | Ala | Leu | Gly | Asn | Arg | Val | Gly | Glu | Ala | Ala | His | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Gly | Asn | Thr | Gly | His | Glu | Ile | Gly | Arg | Gln | Ala | Glu | Asp | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ile | Arg | His | Gly | Ala | Asp | Ala | Val | Arg | Gly | Ser | Trp | Gln | Gly | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Pro | Gly | His | Ser | Gly | Ala | Trp | Glu | Thr | Ser | Gly | Gly | His | Gly | Ile |
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| Phe | Gly | Ser | Gln | Gly | Gly | Leu | Gly | Gly | Gln | Gly | Gln | Gly | Asn | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Gly | Leu | Gly | Thr | Pro | Trp | Val | His | Gly | Tyr | Pro | Gly | Asn | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ala | Gly | Ser | Phe | Gly | Met | Asn | Pro | Gln | Gly | Ala | Pro | Trp | Gly | Gln |
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| Asn | Glu | Gly | Cys | Thr | Asn | Pro | Pro | Pro | Ser | Gly | Ser | Gly | Gly | Gly |
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| Ser | Ser | Asn | Ser | Gly | Gly | Gly | Ser | Gly | Ser | Gln | Ser | Gly | Ser | Ser |
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| Gly | Ser | Gly | Ser | Asn | Gly | Asp | Asn | Asn | Asn | Gly | Ser | Ser | Ser | Gly |
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| Arg | Gly | Asp | Ser | Gly | Ser | Glu | Ser | Ser | Trp | Gly | Ser | Ser | Thr | Gly |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ser | Ser | Ser | Gly | Asn | His | Gly | Gly | Ser | Gly | Gly | Gly | Asn | Gly | His |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Lys | Pro | Gly | Cys | Glu | Lys | Pro | Gly | Asn | Glu | Ala | Arg | Gly | Ser | Gly |
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| Thr | Ser | Gln | Gly | Leu | Gln | Ala | Gln | Leu | Ala | Gln | Ala | Phe | Phe | His |
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| Leu | Ser | Ala | Asn | Ile | Thr | Ala | Leu | Ile | Arg | Arg | Glu | Val | Lys | Ala |
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| Asn | Glu | Val | Phe | His | Tyr | Gly | Ser | Leu | Arg | Gly | Arg | Ser | Arg | Arg | | 35 | 40 | 45 |
| Pro | Val | Asn | Leu | Lys | Lys | Trp | Ser | Ile | Thr | Asp | Gly | Tyr | Val | Pro | | 50 | 55 | 60 |
| Ile | Leu | Gly | Asn | Lys | Thr | Leu | Pro | Ser | Arg | Cys | His | Gln | Cys | Val | | 65 | 70 | 75 |
| Ile | Val | Ser | Ser | Ser | Ser | His | Leu | Leu | Gly | Thr | Lys | Leu | Gly | Pro | | 80 | 85 | 90 |
| Glu | Ile | Glu | Arg | Ala | Glu | Cys | Thr | Ile | Arg | Met | Asn | Asp | Ala | Pro | | 95 | 100 | 105 |
| Thr | Thr | Gly | Tyr | Ser | Ala | Asp | Val | Gly | Asn | Lys | Thr | Thr | Tyr | Arg | | 110 | 115 | 120 |
| Val | Val | Ala | His | Ser | Ser | Val | Phe | Arg | Val | Leu | Arg | Arg | Pro | Gln | | 125 | 130 | 135 |
| Glu | Phe | Val | Asn | Arg | Thr | Pro | Glu | Thr | Val | Phe | Ile | Phe | Trp | Gly | | 140 | 145 | 150 |
| Pro | Pro | Ser | Lys | Met | Gln | Lys | Pro | Gln | Gly | Ser | Leu | Val | Arg | Val | | 155 | 160 | 165 |
| Ile | Gln | Arg | Ala | Gly | Leu | Val | Phe | Pro | Asn | Met | Glu | Ala | Tyr | Ala | | 170 | 175 | 180 |
| Val | Ser | Pro | Gly | Arg | Met | Arg | Gln | Phe | Asp | Asp | Leu | Phe | Arg | Gly | | 185 | 190 | 195 |
| Glu | Thr | Gly | Lys | Asp | Arg | Glu | Lys | Ser | His | Ser | Trp | Leu | Ser | Thr | | 200 | 205 | 210 |
| Gly | Trp | Phe | Thr | Met | Val | Ile | Ala | Val | Glu | Leu | Cys | Asp | His | Val | | 215 | 220 | 225 |
| His | Val | Tyr | Gly | Met | Val | Pro | Pro | Asn | Tyr | Cys | Ser | Gln | Arg | Pro | | 230 | 235 | 240 |
| Arg | Leu | Gln | Arg | Met | Pro | Tyr | His | Tyr | Tyr | Glu | Pro | Lys | Gly | Pro | | 245 | 250 | 255 |
| Asp | Glu | Cys | Val | Thr | Tyr | Ile | Gln | Asn | Glu | His | Ser | Arg | Lys | Gly | | 260 | 265 | 270 |
| Asn | His | His | Arg | Phe | Ile | Thr | Glu | Lys | Arg | Val | Phe | Ser | Ser | Trp | | 275 | 280 | 285 |
| Ala | Gln | Leu | Tyr | Gly | Ile | Thr | Phe | Ser | His | Pro | Ser | Trp | Thr | | | 290 | 295 | |

<210> 57

<211> 4277

<212> DNA

<213> Homo sapiens

<400> 57

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gcagaggggc gaggtgaag ccgagtggcc cgaggtgtct gaggggctgg 150
ggcaaagggtg aaagagtttc agaacaagct tcctggaacc catgacccat 200
gaagtcttgt cgacatttat accgtctgag ggtagcagct cgaaactaga 250
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<212> PRT

<213> Homo sapiens

<400> 58

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Leu | Arg | Gly | Thr | Met | Thr | Ala | Trp | Arg | Gly | Met | Arg | Pro | Glu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val | Thr | Leu | Ala | Cys | Leu | Leu | Leu | Ala | Thr | Ala | Gly | Cys | Phe | Ala | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Asp | Leu | Asn | Glu | Val | Pro | Gln | Val | Thr | Val | Gln | Pro | Ala | Ser | Thr | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Val | Gln | Lys | Pro | Gly | Gly | Thr | Val | Ile | Leu | Gly | Cys | Val | Val | Glu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Pro | Pro | Arg | Met | Asn | Val | Thr | Trp | Arg | Leu | Asn | Gly | Lys | Glu | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Asn | Gly | Ser | Asp | Asp | Ala | Leu | Gly | Val | Leu | Ile | Thr | His | Gly | Thr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Val | Ile | Thr | Ala | Leu | Asn | Asn | His | Thr | Val | Gly | Arg | Tyr | Gln | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Cys | Val | Ala | Arg | Met | Pro | Ala | Gly | Ala | Val | Ala | Ser | Val | Pro | Ala | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Thr | Val | Thr | Leu | Ala | Asn | Leu | Gln | Asp | Phe | Lys | Leu | Asp | Val | Gln | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| His | Val | Ile | Glu | Val | Asp | Glu | Gly | Asn | Thr | Ala | Val | Ile | Ala | Cys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Leu | Pro | Glu | Ser | His | Pro | Lys | Ala | Gln | Val | Arg | Tyr | Ser | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Gln | Glu | Trp | Leu | Glu | Ala | Ser | Arg | Gly | Asn | Tyr | Leu | Ile | Met | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Ser | Gly | Asn | Leu | Gln | Ile | Val | Asn | Ala | Ser | Gln | Glu | Asp | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Met | Tyr | Lys | Cys | Ala | Ala | Tyr | Asn | Pro | Val | Thr | Gln | Glu | Val | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Thr | Ser | Gly | Ser | Ser | Asp | Arg | Leu | Arg | Val | Arg | Arg | Ser | Thr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Glu | Ala | Ala | Arg | Ile | Ile | Tyr | Pro | Pro | Glu | Ala | Gln | Thr | Ile | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Val | Thr | Lys | Gly | Gln | Ser | Leu | Ile | Leu | Glu | Cys | Val | Ala | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Ile | Pro | Pro | Pro | Arg | Val | Thr | Trp | Ala | Lys | Asp | Gly | Ser | Ser | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Val Thr Gly Tyr | Asn Lys Thr Arg Phe | Leu Leu Ser Asn Leu Leu | 275 | 280 | 285 |
| Ile Asp Thr Thr | Ser Glu Glu Asp Ser | Gly Thr Tyr Arg Cys Met | 290 | 295 | 300 |
| Ala Asp Asn Gly | Val Gly Gln Pro Gly | Ala Ala Val Ile Leu Tyr | 305 | 310 | 315 |
| Asn Val Gln Val | Phe Glu Pro Pro Glu | Val Thr Met Glu Leu Ser | 320 | 325 | 330 |
| Gln Leu Val Ile | Pro Trp Gly Gln Ser | Ala Lys Leu Thr Cys Glu | 335 | 340 | 345 |
| Val Arg Gly Asn | Pro Pro Pro Ser Val | Leu Trp Leu Arg Asn Ala | 350 | 355 | 360 |
| Val Pro Leu Ile | Ser Ser Gln Arg Leu | Arg Leu Ser Arg Arg Ala | 365 | 370 | 375 |
| Leu Arg Val Leu | Ser Met Gly Pro Glu | Asp Glu Gly Val Tyr Gln | 380 | 385 | 390 |
| Cys Met Ala Glu | Asn Glu Val Gly Ser | Ala His Ala Val Val Gln | 395 | 400 | 405 |
| Leu Arg Thr Ser | Arg Pro Ser Ile Thr | Pro Arg Leu Trp Gln Asp | 410 | 415 | 420 |
| Ala Glu Leu Ala | Thr Gly Thr Pro Pro | Val Ser Pro Ser Lys Leu | 425 | 430 | 435 |
| Gly Asn Pro Glu | Gln Met Leu Arg Gly | Gln Pro Ala Leu Pro Arg | 440 | 445 | 450 |
| Pro Pro Thr Ser | Val Gly Pro Ala Ser | Pro Lys Cys Pro Gly Glu | 455 | 460 | 465 |
| Lys Gly Gln Gly | Ala Pro Ala Glu Ala | Pro Ile Ile Leu Ser Ser | 470 | 475 | 480 |
| Pro Arg Thr Ser | Lys Thr Asp Ser Tyr | Glu Leu Val Trp Arg Pro | 485 | 490 | 495 |
| Arg His Glu Gly | Ser Gly Arg Ala Pro | Ile Leu Tyr Tyr Val Val | 500 | 505 | 510 |
| Lys His Arg Lys | Gln Val Thr Asn Ser | Ser Asp Asp Trp Thr Ile | 515 | 520 | 525 |
| Ser Gly Ile Pro | Ala Asn Gln His Arg | Leu Thr Leu Thr Arg Leu | 530 | 535 | 540 |
| Asp Pro Gly Ser | Leu Tyr Glu Val Glu | Met Ala Ala Tyr Asn Cys | 545 | 550 | 555 |
| Ala Gly Glu Gly | Gln Thr Ala Met Val | Thr Phe Arg Thr Gly Arg | | | |

| 560 | | | | | | | | | | 565 | | | | | 570 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Arg | Pro | Lys | Pro | Glu | Ile | Met | Ala | Ser | Lys | Glu | Gln | Gln | Ile | Gln | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Arg | Asp | Asp | Pro | Gly | Ala | Ser | Pro | Gln | Ser | Ser | Ser | Ser | Gln | Pro | Asp | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| His | Gly | Arg | Leu | Ser | Pro | Pro | Glu | Ala | Pro | Asp | Arg | Pro | Thr | Ile | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Ser | Thr | Ala | Ser | Glu | Thr | Ser | Val | Tyr | Val | Thr | Trp | Ile | Pro | Arg | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Gly | Asn | Gly | Gly | Phe | Pro | Ile | Gln | Ser | Phe | Arg | Val | Glu | Tyr | Lys | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Lys | Leu | Lys | Lys | Val | Gly | Asp | Trp | Ile | Leu | Ala | Thr | Ser | Ala | Ile | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Pro | Pro | Ser | Arg | Leu | Ser | Val | Glu | Ile | Thr | Gly | Leu | Glu | Lys | Gly | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |
| Thr | Ser | Tyr | Lys | Phe | Arg | Val | Arg | Ala | Leu | Asn | Met | Leu | Gly | Glu | | | | | |
| | | | | 680 | | | | | 685 | | | | | 690 | | | | | |
| Ser | Glu | Pro | Ser | Ala | Pro | Ser | Arg | Pro | Tyr | Val | Val | Ser | Gly | Tyr | | | | | |
| | | | | 695 | | | | | 700 | | | | | 705 | | | | | |
| Ser | Gly | Arg | Val | Tyr | Glu | Arg | Pro | Val | Ala | Gly | Pro | Tyr | Ile | Thr | | | | | |
| | | | | 710 | | | | | 715 | | | | | 720 | | | | | |
| Phe | Thr | Asp | Ala | Val | Asn | Glu | Thr | Thr | Ile | Met | Leu | Lys | Trp | Met | | | | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | | | |
| Tyr | Ile | Pro | Ala | Ser | Asn | Asn | Asn | Thr | Pro | Ile | His | Gly | Phe | Tyr | | | | | |
| | | | | 740 | | | | | 745 | | | | | 750 | | | | | |
| Ile | Tyr | Tyr | Arg | Pro | Thr | Asp | Ser | Asp | Asn | Asp | Ser | Asp | Tyr | Lys | | | | | |
| | | | | 755 | | | | | 760 | | | | | 765 | | | | | |
| Lys | Asp | Met | Val | Glu | Gly | Asp | Lys | Tyr | Trp | His | Ser | Ile | Ser | His | | | | | |
| | | | | 770 | | | | | 775 | | | | | 780 | | | | | |
| Leu | Gln | Pro | Glu | Thr | Ser | Tyr | Asp | Ile | Lys | Met | Gln | Cys | Phe | Asn | | | | | |
| | | | | 785 | | | | | 790 | | | | | 795 | | | | | |
| Glu | Gly | Gly | Glu | Ser | Glu | Phe | Ser | Asn | Val | Met | Ile | Cys | Glu | Thr | | | | | |
| | | | | 800 | | | | | 805 | | | | | 810 | | | | | |
| Lys | Ala | Arg | Lys | Ser | Ser | Gly | Gln | Pro | Gly | Arg | Leu | Pro | Pro | Pro | | | | | |
| | | | | 815 | | | | | 820 | | | | | 825 | | | | | |
| Thr | Leu | Ala | Pro | Pro | Gln | Pro | Pro | Leu | Pro | Glu | Thr | Ile | Glu | Arg | | | | | |
| | | | | 830 | | | | | 835 | | | | | 840 | | | | | |
| Pro | Val | Gly | Thr | Gly | Ala | Met | Val | Ala | Arg | Ser | Ser | Asp | Leu | Pro | | | | | |
| | | | | 845 | | | | | 850 | | | | | 855 | | | | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Tyr | Leu | Ile | Val | Gly | Val | Val | Leu | Gly | Ser | Ile | Val | Leu | Ile | Ile | 860 | 865 | 870 |
| Val | Thr | Phe | Ile | Pro | Phe | Cys | Leu | Trp | Arg | Ala | Trp | Ser | Lys | Gln | 875 | 880 | 885 |
| Lys | His | Thr | Thr | Asp | Leu | Gly | Phe | Pro | Arg | Ser | Ala | Leu | Pro | Pro | 890 | 895 | 900 |
| Ser | Cys | Pro | Tyr | Thr | Met | Val | Pro | Leu | Gly | Gly | Leu | Pro | Gly | His | 905 | 910 | 915 |
| Gln | Ala | Ser | Gly | Gln | Pro | Tyr | Leu | Ser | Gly | Ile | Ser | Gly | Arg | Ala | 920 | 925 | 930 |
| Cys | Ala | Asn | Gly | Ile | His | Met | Asn | Arg | Gly | Cys | Pro | Ser | Ala | Ala | 935 | 940 | 945 |
| Val | Gly | Tyr | Pro | Gly | Met | Lys | Pro | Gln | Gln | His | Cys | Pro | Gly | Glu | 950 | 955 | 960 |
| Leu | Gln | Gln | Gln | Ser | Asp | Thr | Ser | Ser | Leu | Leu | Arg | Gln | Thr | His | 965 | 970 | 975 |
| Leu | Gly | Asn | Gly | Tyr | Asp | Pro | Gln | Ser | His | Gln | Ile | Thr | Arg | Gly | 980 | 985 | 990 |
| Pro | Lys | Ser | Ser | Pro | Asp | Glu | Gly | Ser | Phe | Leu | Tyr | Thr | Leu | Pro | 995 | 1000 | 1005 |
| Asp | Asp | Ser | Thr | His | Gln | Leu | Leu | Gln | Pro | His | His | Asp | Cys | Cys | 1010 | 1015 | 1020 |
| Gln | Arg | Gln | Glu | Gln | Pro | Ala | Ala | Val | Gly | Gln | Ser | Gly | Val | Arg | 1025 | 1030 | 1035 |
| Arg | Ala | Pro | Asp | Ser | Pro | Val | Leu | Glu | Ala | Val | Trp | Asp | Pro | Pro | 1040 | 1045 | 1050 |
| Phe | His | Ser | Gly | Pro | Pro | Cys | Cys | Leu | Gly | Leu | Val | Pro | Val | Glu | 1055 | 1060 | 1065 |
| Glu | Val | Asp | Ser | Pro | Asp | Ser | Cys | Gln | Val | Ser | Gly | Gly | Asp | Trp | 1070 | 1075 | 1080 |
| Cys | Pro | Gln | His | Pro | Val | Gly | Ala | Tyr | Val | Gly | Gln | Glu | Pro | Gly | 1085 | 1090 | 1095 |
| Met | Gln | Leu | Ser | Pro | Gly | Pro | Leu | Val | Arg | Val | Ser | Phe | Glu | Thr | 1100 | 1105 | 1110 |
| Pro | Pro | Leu | Thr | Ile | | | | | | | | | | | 1115 | | |

<210> 59
 <211> 25
 <212> DNA
 <213> Artificial

<220>
<221> Artificial sequence
<222> 1-25
<223> Synthetic construct.

<400> 59
gggaaacaca gcagtcattg cctgc 25

<210> 60
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-24
<223> Synthetic construct.

<400> 60
gcacacgtag cctgtcgctg gagc 24

<210> 61
<211> 42
<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-42
<223> Synthetic construct.

<400> 61
caccctaaag cccaggtccg gtacagcgtc aaacaagagt gg 42

<210> 62
<211> 1661
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 678
<223> unknown base

<400> 62
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tgctgtctct gctactgtctg ctgctgtctgc ggcagcccgt aaccgcgcgcg 200
gagaccacgc cgggcgcccc cagagccctc tccacgctgg gctccccag 250
cctcttcacc acgcgggtg tccccagcgc cctcactacc ccaggcctca 300
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<210> 63

<211> 487

<212> PRT

<213> Homo sapiens

<220>
 <221> unsure
 <222> 196, 386
 <223> unknown amino acid

<400> 63

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gln | Pro | Thr | Gly | Arg | Glu | Gly | Ser | Arg | Ala | Leu | Ser | Arg | Arg | 1 | 5 | 10 | 15 |
| Tyr | Leu | Arg | Arg | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Arg | 20 | 25 | 30 | |
| Gln | Pro | Val | Thr | Arg | Ala | Glu | Thr | Thr | Pro | Gly | Ala | Pro | Arg | Ala | 35 | 40 | 45 | |
| Leu | Ser | Thr | Leu | Gly | Ser | Pro | Ser | Leu | Phe | Thr | Thr | Pro | Gly | Val | 50 | 55 | 60 | |
| Pro | Ser | Ala | Leu | Thr | Thr | Pro | Gly | Leu | Thr | Thr | Pro | Gly | Thr | Pro | 65 | 70 | 75 | |
| Lys | Thr | Leu | Asp | Leu | Arg | Gly | Arg | Ala | Gln | Ala | Leu | Met | Arg | Ser | 80 | 85 | 90 | |
| Phe | Pro | Leu | Val | Asp | Gly | His | Asn | Asp | Leu | Pro | Gln | Val | Leu | Arg | 95 | 100 | 105 | |
| Gln | Arg | Tyr | Lys | Asn | Val | Leu | Gln | Asp | Val | Asn | Leu | Arg | Asn | Phe | 110 | 115 | 120 | |
| Ser | His | Gly | Gln | Thr | Ser | Leu | Asp | Arg | Leu | Arg | Asp | Gly | Leu | Val | 125 | 130 | 135 | |
| Gly | Ala | Gln | Phe | Trp | Ser | Ala | Ser | Val | Ser | Cys | Gln | Ser | Gln | Asp | 140 | 145 | 150 | |
| Gln | Thr | Ala | Val | Arg | Leu | Ala | Leu | Glu | Gln | Ile | Asp | Leu | Ile | His | 155 | 160 | 165 | |
| Arg | Met | Cys | Ala | Ser | Tyr | Ser | Glu | Leu | Glu | Leu | Val | Thr | Ser | Ala | 170 | 175 | 180 | |
| Glu | Gly | Leu | Asn | Ser | Ser | Gln | Lys | Leu | Ala | Cys | Leu | Ile | Gly | Val | 185 | 190 | 195 | |
| Xaa | Gly | Gly | His | Ser | Leu | Asp | Ser | Ser | Leu | Ser | Val | Leu | Arg | Ser | 200 | 205 | 210 | |
| Phe | Tyr | Val | Leu | Gly | Val | Arg | Tyr | Leu | Thr | Leu | Thr | Phe | Thr | Cys | 215 | 220 | 225 | |
| Ser | Thr | Pro | Trp | Ala | Glu | Ser | Ser | Thr | Lys | Phe | Arg | His | His | Met | 230 | 235 | 240 | |
| Tyr | Thr | Asn | Val | Ser | Gly | Leu | Thr | Ser | Phe | Gly | Glu | Lys | Val | Val | 245 | 250 | 255 | |
| Glu | Glu | Leu | Asn | Arg | Leu | Gly | Met | Met | Ile | Asp | Leu | Ser | Tyr | Ala | | | | |

| 260 | 265 | 270 |
|---|-----|-----|
| Ser Asp Thr Leu Ile Arg Arg Val Leu Glu Val Ser Gln Ala Pro | | |
| 275 | 280 | 285 |
| Val Ile Phe Ser His Ser Ala Ala Arg Ala Val Cys Asp Asn Leu | | |
| 290 | 295 | 300 |
| Leu Asn Val Pro Asp Asp Ile Leu Gln Leu Leu Lys Asn Gly Gly | | |
| 305 | 310 | 315 |
| Ile Val Met Val Thr Leu Ser Met Gly Val Leu Gln Cys Asn Leu | | |
| 320 | 325 | 330 |
| Leu Ala Asn Val Ser Thr Val Ala Asp His Phe Asp His Ile Arg | | |
| 335 | 340 | 345 |
| Ala Val Ile Gly Ser Glu Phe Ile Gly Ile Gly Gly Asn Tyr Asp | | |
| 350 | 355 | 360 |
| Gly Thr Gly Arg Phe Pro Gln Gly Leu Glu Asp Val Ser Thr Tyr | | |
| 365 | 370 | 375 |
| Pro Val Leu Ile Glu Glu Leu Leu Ser Arg Xaa Trp Ser Glu Glu | | |
| 380 | 385 | 390 |
| Glu Leu Gln Gly Val Leu Arg Gly Asn Leu Leu Arg Val Phe Arg | | |
| 395 | 400 | 405 |
| Gln Val Glu Lys Val Arg Glu Glu Ser Arg Ala Gln Ser Pro Val | | |
| 410 | 415 | 420 |
| Glu Ala Glu Phe Pro Tyr Gly Gln Leu Ser Thr Ser Cys His Ser | | |
| 425 | 430 | 435 |
| His Leu Val Pro Gln Asn Gly His Gln Ala Thr His Leu Glu Val | | |
| 440 | 445 | 450 |
| Thr Lys Gln Pro Thr Asn Arg Val Pro Trp Arg Ser Ser Asn Ala | | |
| 455 | 460 | 465 |
| Ser Pro Tyr Leu Val Pro Gly Leu Val Ala Ala Ala Thr Ile Pro | | |
| 470 | 475 | 480 |
| Thr Phe Thr Gln Trp Leu Cys | | |
| 485 | | |

<210> 64

<211> 25

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-25

<223> Synthetic construct.

<400> 64

ccttcacctg cagtacacca tgggc 25

<210> 65

<211> 25

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-25

<223> Synthetic construct.

<400> 65

gtcacacaca gctctggcag ctgag 25

<210> 66

<211> 47

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-47

<223> Synthetic construct.

<400> 66

ccaagttcag acaccacatg tacaccaacg tcagcggatt gacaagc 47

<210> 67

<211> 1564

<212> DNA

<213> Homo sapiens

<400> 67

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ggcccagcaa gcctgataag catgaagctc ttatctttgg tggctgtggt 150
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gcccatgcca gtgcctggcc atgacgtgga ggcctactgc ctgctgtgcg 350
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<210> 68
 <211> 183
 <212> PRT
 <213> Homo sapiens

<400> 68
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 Cys Ile Cys Pro Pro Tyr Arg Asn Ile Ser Gly His Ile Tyr Asn
 35 40 45
 Gln Asn Val Ser Gln Lys Asp Cys Asn Cys Leu His Val Val Glu
 50 55 60

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Met | Pro | Val | Pro | Gly | His | Asp | Val | Glu | Ala | Tyr | Cys | Leu | Leu | 65 | 70 | 75 |
| Cys | Glu | Cys | Arg | Tyr | Glu | Glu | Arg | Ser | Thr | Thr | Thr | Ile | Lys | Val | 80 | 85 | 90 |
| Ile | Ile | Val | Ile | Tyr | Leu | Ser | Val | Val | Gly | Ala | Leu | Leu | Leu | Tyr | 95 | 100 | 105 |
| Met | Ala | Phe | Leu | Met | Leu | Val | Asp | Pro | Leu | Ile | Arg | Lys | Pro | Asp | 110 | 115 | 120 |
| Ala | Tyr | Thr | Glu | Gln | Leu | His | Asn | Glu | Glu | Glu | Asn | Glu | Asp | Ala | 125 | 130 | 135 |
| Arg | Ser | Met | Ala | Ala | Ala | Ala | Ala | Ser | Leu | Gly | Gly | Pro | Arg | Ala | 140 | 145 | 150 |
| Asn | Thr | Val | Leu | Glu | Arg | Val | Glu | Gly | Ala | Gln | Gln | Arg | Trp | Lys | 155 | 160 | 165 |
| Leu | Gln | Val | Gln | Glu | Gln | Arg | Lys | Thr | Val | Phe | Asp | Arg | His | Lys | 170 | 175 | 180 |
| Met | Leu | Ser | | | | | | | | | | | | | | | |

<210> 69
 <211> 3170
 <212> DNA
 <213> Homo sapiens

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 tccctttgca ttcccacccc tccgggcttt gcgtcttcct ggggaccccc 200
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tcatttcttg accaaaatct gcaaaccagt gctccatcag ggggaagtct 850
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aaaacttttt cgtttgttca ggttttggca acacatagat catatgtctg 2100

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 accacagttt ctaaattctt tgaaaccact ttactacttt ttttaaactt 2550
 aactcagttc taaatacttt gtctggagca caaaacaata aaaggttatc 2600
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 agattgagtt tgagcctgta tatctattaa aaatttcaac tttccacata 2750
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<210> 70
 <211> 259
 <212> PRT
 <213> Homo sapiens

<400> 70
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 Leu Leu Ala Ala Val Leu Met Val Glu Ser Ser Gln Ile Gly Ser
 20 25 30
 Ser Arg Ala Lys Leu Asn Ser Ile Lys Ser Ser Leu Gly Gly Glu
 35 40 45

| | | | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Gly | Gln | Ala | Ala | Asn | Arg | Ser | Ala | Gly | Met | Tyr | Gln | Gly | 50 | 55 | 60 |
| Leu | Ala | Phe | Gly | Gly | Ser | Lys | Lys | Gly | Lys | Asn | Leu | Gly | Gln | Ala | 65 | 70 | 75 |
| Tyr | Pro | Cys | Ser | Ser | Asp | Lys | Glu | Cys | Glu | Val | Gly | Arg | Tyr | Cys | 80 | 85 | 90 |
| His | Ser | Pro | His | Gln | Gly | Ser | Ser | Ala | Cys | Met | Val | Cys | Arg | Arg | 95 | 100 | 105 |
| Lys | Lys | Lys | Arg | Cys | His | Arg | Asp | Gly | Met | Cys | Cys | Pro | Ser | Thr | 110 | 115 | 120 |
| Arg | Cys | Asn | Asn | Gly | Ile | Cys | Ile | Pro | Val | Thr | Glu | Ser | Ile | Leu | 125 | 130 | 135 |
| Thr | Pro | His | Ile | Pro | Ala | Leu | Asp | Gly | Thr | Arg | His | Arg | Asp | Arg | 140 | 145 | 150 |
| Asn | His | Gly | His | Tyr | Ser | Asn | His | Asp | Leu | Gly | Trp | Gln | Asn | Leu | 155 | 160 | 165 |
| Gly | Arg | Pro | His | Thr | Lys | Met | Ser | His | Ile | Lys | Gly | His | Glu | Gly | 170 | 175 | 180 |
| Asp | Pro | Cys | Leu | Arg | Ser | Ser | Asp | Cys | Ile | Glu | Gly | Phe | Cys | Cys | 185 | 190 | 195 |
| Ala | Arg | His | Phe | Trp | Thr | Lys | Ile | Cys | Lys | Pro | Val | Leu | His | Gln | 200 | 205 | 210 |
| Gly | Glu | Val | Cys | Thr | Lys | Gln | Arg | Lys | Lys | Gly | Ser | His | Gly | Leu | 215 | 220 | 225 |
| Glu | Ile | Phe | Gln | Arg | Cys | Asp | Cys | Ala | Lys | Gly | Leu | Ser | Cys | Lys | 230 | 235 | 240 |
| Val | Trp | Lys | Asp | Ala | Thr | Tyr | Ser | Ser | Lys | Ala | Arg | Leu | His | Val | 245 | 250 | 255 |
| Cys Gln Lys Ile | | | | | | | | | | | | | | | | | |

<210> 71

<211> 1809

<212> DNA

<213> Homo sapiens

<400> 71

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cttccttta acttcttatg tcagaatgag gaaggatagc tgcatttatt 200

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 ctgaaaaga 1809

<210> 72
 <211> 363
 <212> PRT
 <213> Homo sapiens

<400> 72
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 20 25 30
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 35 40 45
 Gln Ile Leu Asp Gln Leu Lys Ala Pro Ser Leu Gly Gln Phe Thr
 50 55 60
 Thr Thr Pro Ser Thr Gln Gln Asn Ser Thr Ser His Pro Thr Thr
 65 70 75
 Thr Thr Ser Trp Asp Leu Lys Pro Pro Thr Ser Gln Ser Ser Val
 80 85 90
 Leu Ser His Leu Asp Phe Lys Ser Gln Pro Glu Pro Ser Pro Val
 95 100 105
 Leu Ser Gln Leu Ser Gln Arg Gln Gln His Gln Ser Gln Ala Val
 110 115 120
 Thr Val Pro Pro Pro Gly Leu Glu Ser Phe Pro Ser Gln Ala Lys
 125 130 135
 Leu Arg Glu Ser Thr Pro Gly Asp Ser Pro Ser Thr Val Asn Lys
 140 145 150
 Leu Leu Gln Leu Pro Ser Thr Thr Ile Glu Asn Ile Ser Val Ser
 155 160 165
 Val His Gln Pro Gln Pro Lys His Ile Lys Leu Ala Lys Arg Arg
 170 175 180
 Ile Pro Pro Ala Ser Lys Ile Pro Ala Ser Ala Val Glu Met Pro
 185 190 195
 Gly Ser Ala Asp Val Thr Gly Leu Asn Val Gln Phe Gly Ala Leu
 200 205 210
 Glu Phe Gly Ser Glu Pro Ser Leu Ser Glu Phe Gly Ser Ala Pro
 215 220 225

| | | | |
|-----------------|-------------------------|---------------------|-----|
| Ser Ser Glu Asn | Ser Asn Gln Ile Pro Ile | Ser Leu Tyr Ser | Lys |
| 230 | 235 | | 240 |
| Ser Leu Ser Glu | Pro Leu Asn Thr Ser | Leu Ser Met Thr Ser | Ala |
| 245 | 250 | | 255 |
| Val Gln Asn Ser | Thr Tyr Thr Thr Ser | Val Ile Thr Ser Cys | Ser |
| 260 | 265 | | 270 |
| Leu Thr Ser Ser | Ser Leu Asn Ser Ala | Ser Pro Val Ala Met | Ser |
| 275 | 280 | | 285 |
| Ser Ser Tyr Asp | Gln Ser Ser Val His | Asn Arg Ile Pro Tyr | Gln |
| 290 | 295 | | 300 |
| Ser Pro Val Ser | Ser Ser Glu Ser Ala | Pro Gly Thr Ile Met | Asn |
| 305 | 310 | | 315 |
| Gly His Gly Gly | Gly Arg Ser Gln Gln | Thr Leu Asp Ser Lys | Tyr |
| 320 | 325 | | 330 |
| Ser Ser Lys Leu | Leu Leu Ser Trp Leu | Val Pro Thr Lys Gln | Arg |
| 335 | 340 | | 345 |
| Lys Arg Ile Ala | His Val Met Trp Lys | Thr Pro Val Gly Gln | Trp |
| 350 | 355 | | 360 |

Leu Ile Arg

<210> 73
 <211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-26
 <223> Synthetic construct.

<400> 73
 aattcatggc aaatatttcc cttccc 26

<210> 74
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-22
 <223> Synthetic construct.

<400> 74
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<210> 75
 <211> 50

<212> DNA
<213> Artificial

<220>
<221> Artificial sequence
<222> 1-50
<223> Synthetic construct

<400> 75
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<210> 76
<211> 1989
<212> DNA
<213> Homo sapiens

<400> 76
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tgcaactcagc ggtggaggag acggacgcgg ggctgtacac ctgcaacctg 150
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tgctggcggg ggcgcgcggc gcacccgcgc ttctgacctg cgtgaaccgc 300
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gccccctgcc tgccaagtac atcgacctag acaaagggtt ccggaaggag 1050

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<210> 77

<211> 341

<212> PRT

<213> Homo sapiens

<400> 77

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Leu | Pro | Ser | Arg | Ile | Leu | Leu | Trp | Lys | Leu | Val | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Ser | Ser | Ala | Val | Leu | Leu | His | Ser | Ala | Val | Glu | Glu | Thr | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Gly | Leu | Tyr | Thr | Cys | Asn | Leu | His | His | His | Tyr | Cys | His | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Tyr | Glu | Ser | Leu | Ala | Val | Arg | Leu | Glu | Val | Thr | Asp | Gly | Pro | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Thr | Pro | Ala | Tyr | Trp | Asp | Gly | Glu | Lys | Glu | Val | Leu | Ala | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |

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|-----------------|-----|-----------------|-----------------|-----------------|---------|
| Ala Arg Gly Ala | Pro | Ala Leu Leu Thr | Cys | Val Asn Arg Gly | His |
| | 80 | | 85 | | 90 |
| Val Trp Thr Asp | Arg | His Val Glu Glu | Ala Gln Gln Val | Val | His |
| | 95 | | 100 | | 105 |
| Trp Asp Arg Gln | Pro | Pro Gly Val | Pro | His Asp Arg Ala | Asp Arg |
| | 110 | | | 115 | 120 |
| Leu Leu Asp Leu | Tyr | Ala Ser Gly Glu | Arg Arg Ala Tyr | Gly | Pro |
| | 125 | | 130 | | 135 |
| Leu Phe Leu Arg | Asp | Arg Val Ala Val | Gly Ala Asp Ala | Phe | Glu |
| | 140 | | 145 | | 150 |
| Arg Gly Asp Phe | Ser | Leu Arg Ile Glu | Pro Leu Glu Val | Ala | Asp |
| | 155 | | 160 | | 165 |
| Glu Gly Thr Tyr | Ser | Cys His Leu His | His His Tyr Cys | Gly | Leu |
| | 170 | | 175 | | 180 |
| His Glu Arg Arg | Val | Phe His Leu Thr | Val Ala Glu Pro | His | Ala |
| | 185 | | 190 | | 195 |
| Glu Pro Pro Pro | Arg | Gly Ser Pro Gly | Asn Gly Ser Ser | His | Ser |
| | 200 | | 205 | | 210 |
| Gly Ala Pro Gly | Pro | Asp Pro Thr Leu | Ala Arg Gly His | Asn | Val |
| | 215 | | 220 | | 225 |
| Ile Asn Val Ile | Val | Pro Glu Ser Arg | Ala His Phe Phe | Gln | Gln |
| | 230 | | 235 | | 240 |
| Leu Gly Tyr Val | Leu | Ala Thr Leu Leu | Leu Phe Ile Leu | Leu | Leu |
| | 245 | | 250 | | 255 |
| Val Thr Val Leu | Leu | Ala Ala Arg Arg | Arg Arg Gly Gly | Tyr | Glu |
| | 260 | | 265 | | 270 |
| Tyr Ser Asp Gln | Lys | Ser Gly Lys Ser | Lys Gly Lys Asp | Val | Asn |
| | 275 | | 280 | | 285 |
| Leu Ala Glu Phe | Ala | Val Ala Ala Gly | Asp Gln Met Leu | Tyr | Arg |
| | 290 | | 295 | | 300 |
| Ser Glu Asp Ile | Gln | Leu Asp Tyr Lys | Asn Asn Ile Leu | Lys | Glu |
| | 305 | | 310 | | 315 |
| Arg Ala Glu Leu | Ala | His Ser Pro Leu | Pro Ala Lys Tyr | Ile | Asp |
| | 320 | | 325 | | 330 |
| Leu Asp Lys Gly | Phe | Arg Lys Glu Asn | Cys Lys | | |
| | 335 | | 340 | | |

<210> 78

<211> 2243

<212> DNA

<213> Homo sapiens

<400> 78

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cgccccctgg cctgcagagg cccgaggacc gcttctgtgg cacatacatc 200
atcttcttca gcctgggcat tggcagtcta ctgccatgga acttctttat 250
cactgccaag gactactgga tgttcaaact ccgcaactcc tccagcccag 300
ccaccgggga ggaccctgag ggctcagaca tcctgaacta ctttgagagc 350
taccttgccg ttgcctccac cgtgccctcc atgctgtgcc tgggtggcaa 400
cttctgctt gtcaacaggg ttgcagtcca catccgtgtc ctggcctcac 450
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gacacttcct cctggaccgc tggttttttt gcggtcacca ttgtctgcat 550
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gccatgggcg ggacggtcag cgcctggcc tcattggtgg acttggtgc 700
atccagtgat gtgaggaaca gcgcctggc cttcttctg acggccacca 750
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tatgccagg actacatgag gcctgttctt gcggcccatg tgttttctgg 850
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tatgtgtgct tgggcttaac actgggctca gcctgtctc cctcctgggt 1450

gcacctcatc tagaaggaggacacacagga cattggtgct tcagagcctt 1500
tgaagatgag aagagagtgc aggagggtg ggggccatgg aggaaaggcc 1550
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acaaatcagg ggtactccct tcacagctga tggtaacat tccaccttct 1750
ttctagccct tcaaagatgc tgccagtgtt cgccctagag ttattacaaa 1800
gccagtgccaa aaaccagacc atgggctctt tgcaacctcc cagctgcgct 1850
cattccagct gacagcgaga tgcaagcaaa tgctcagctc tccttaccct 1900
gaaggggtct ccctggaatg gaagtcccct ggcatggtca gtcctcaggc 1950
ccaagactca agtgtgcaca gaccctgtg ttctgcgggt gaacaactgc 2000
ccactaacca gactggaaaaa ccagaaaga tgggccttcc atgaatgctt 2050
cattccagag ggaccagagg gcctccctgt gcaagggatc aagcatgtct 2100
ggcctgggtt ttcaaaaaaa gagggatcct catgacctgg tgggtctatgg 2150
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gccattggtt caagggcgta ataaatactt gcgtattcaa aaa 2243

<210> 79
<211> 475
<212> PRT
<213> Homo sapiens

<400> 79
Met Ala Val Val Ser Glu Asp Asp Phe Gln His Ser Ser Asn Ser
1 5 10 15
Thr Tyr Gly Thr Thr Ser Ser Ser Leu Arg Ala Asp Gln Glu Ala
20 25 30
Leu Leu Glu Lys Leu Leu Asp Arg Pro Pro Gly Leu Gln Arg
35 40 45
Pro Glu Asp Arg Phe Cys Gly Thr Tyr Ile Ile Phe Phe Ser Leu
50 55 60
Gly Ile Gly Ser Leu Leu Pro Trp Asn Phe Phe Ile Thr Ala Lys
65 70 75
Glu Tyr Trp Met Phe Lys Leu Arg Asn Ser Ser Ser Pro Ala Thr
80 85 90
Gly Glu Asp Pro Glu Gly Ser Asp Ile Leu Asn Tyr Phe Glu Ser
95 100 105

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Leu | Ala | Val | Ala | Ser | Thr | Val | Pro | Ser | Met | Leu | Cys | Leu | Val | 110 | 115 | 120 |
| Ala | Asn | Phe | Leu | Leu | Val | Asn | Arg | Val | Ala | Val | His | Ile | Arg | Val | 125 | 130 | 135 |
| Leu | Ala | Ser | Leu | Thr | Val | Ile | Leu | Ala | Ile | Phe | Met | Val | Ile | Thr | 140 | 145 | 150 |
| Ala | Leu | Val | Lys | Val | Asp | Thr | Ser | Ser | Trp | Thr | Arg | Gly | Phe | Phe | 155 | 160 | 165 |
| Ala | Val | Thr | Ile | Val | Cys | Met | Val | Ile | Leu | Ser | Gly | Ala | Ser | Thr | 170 | 175 | 180 |
| Val | Phe | Ser | Ser | Ser | Ile | Tyr | Gly | Met | Thr | Gly | Ser | Phe | Pro | Met | 185 | 190 | 195 |
| Arg | Asn | Ser | Gln | Ala | Leu | Ile | Ser | Gly | Gly | Ala | Met | Gly | Gly | Thr | 200 | 205 | 210 |
| Val | Ser | Ala | Val | Ala | Ser | Leu | Val | Asp | Leu | Ala | Ala | Ser | Ser | Asp | 215 | 220 | 225 |
| Val | Arg | Asn | Ser | Ala | Leu | Ala | Phe | Phe | Leu | Thr | Ala | Thr | Ile | Phe | 230 | 235 | 240 |
| Leu | Val | Leu | Cys | Met | Gly | Leu | Tyr | Leu | Leu | Leu | Ser | Arg | Leu | Glu | 245 | 250 | 255 |
| Tyr | Ala | Arg | Tyr | Tyr | Met | Arg | Pro | Val | Leu | Ala | Ala | His | Val | Phe | 260 | 265 | 270 |
| Ser | Gly | Glu | Glu | Glu | Leu | Pro | Gln | Asp | Ser | Leu | Ser | Ala | Pro | Ser | 275 | 280 | 285 |
| Val | Ala | Ser | Arg | Phe | Ile | Asp | Ser | His | Thr | Pro | Pro | Leu | Arg | Pro | 290 | 295 | 300 |
| Ile | Leu | Lys | Lys | Thr | Ala | Ser | Leu | Gly | Phe | Cys | Val | Thr | Tyr | Val | 305 | 310 | 315 |
| Phe | Phe | Ile | Thr | Ser | Leu | Ile | Tyr | Pro | Ala | Val | Cys | Thr | Asn | Ile | 320 | 325 | 330 |
| Glu | Ser | Leu | Asn | Lys | Gly | Ser | Gly | Ser | Leu | Trp | Thr | Thr | Lys | Phe | 335 | 340 | 345 |
| Phe | Ile | Pro | Leu | Thr | Thr | Phe | Leu | Leu | Tyr | Asn | Phe | Ala | Asp | Leu | 350 | 355 | 360 |
| Cys | Gly | Arg | Gln | Leu | Thr | Ala | Trp | Ile | Gln | Val | Pro | Gly | Pro | Asn | 365 | 370 | 375 |
| Ser | Lys | Ala | Leu | Pro | Gly | Phe | Val | Leu | Leu | Arg | Thr | Cys | Leu | Ile | 380 | 385 | 390 |
| Pro | Leu | Phe | Val | Leu | Cys | Asn | Tyr | Gln | Pro | Arg | Val | His | Leu | Lys | | | |

| 395 | 400 | 405 |
|-------------------------------------|-------------------------|-----|
| Thr Val Val Phe Gln Ser Asp Val Tyr | Pro Ala Leu Leu Ser Ser | |
| 410 | 415 | 420 |
| Leu Leu Gly Leu Ser Asn Gly Tyr Leu | Ser Thr Leu Ala Leu Leu | |
| 425 | 430 | 435 |
| Tyr Gly Pro Lys Ile Val Pro Arg Glu | Leu Ala Glu Ala Thr Gly | |
| 440 | 445 | 450 |
| Val Val Met Ser Phe Tyr Val Cys Leu | Gly Leu Thr Leu Gly Ser | |
| 455 | 460 | 465 |
| Ala Cys Ser Thr Leu Leu Val His Leu | Ile | |
| 470 | 475 | |

<210> 80
 <211> 22
 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial sequence
 <222> 1-22
 <223> Synthetic construct.

 <400> 80
 ttttgcggtc accattgtct gc 22

<210> 81
 <211> 23
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> Artificial sequence
 <222> 1-23
 <223> Synthetic construct.

 <400> 81
 cgtaggtgac acagaagccc agg 23

<210> 82
 <211> 49
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial sequence
 <222> 1-49
 <223> Synthetic construct.

<400> 82
 tacggcatga ccggctcctt tcctatgagg aactcccagg cactgatat 49

<210> 83
 <211> 1844

<212> DNA

<213> Homo sapiens

<400> 83

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tcctcgtcct cgtccccatc ctctcagcc tggcggcctc ccaggactgg 150
aaggctgaac gcagccaaga ccccttcgag aaatgcatgc aggatcctga 200
ctatgagcag ctgtccaagg tggcgcctg ggggctcaat cggaccctga 250
agccccagag ggtgattgtg gttggcgctg gtgtggccgg gctggtggcc 300
gccaaggctg tcagcgatgc tggacacaag gtcaccatcc tggaggcaga 350
taacaggatc gggggccgca tcttcaccta ccgggaccag aacacgggct 400
ggattgggga gctgggagcc atgcgcatgc ccagctctca caggatcctc 450
cacaagctct gccagggcct ggggctcaac ctgaccaagt tcaccagta 500
cgacaagaac acgtggacgg aggtgcacga agtgaagctg cgcaactatg 550
tggcggagaa ggtgcccag aagctgggct acgccttgcg tccccaggaa 600
aagggccact cgcccgaaga catctaccag atggctctca accaggccct 650
caaagacctc aaggcactgg gctgcagaaa ggcgatgaag aagtttgaaa 700
ggcacacgct cttggaatat cttctcgggg aggggaacct gagccggccg 750
gccgtgcagc ttctgggaga cgtgatgtcc gaggatggct tcttctatct 800
cagcttcgcc gaggccctcc gggcccacag ctgcctcagc gacagactcc 850
agtacagccg catcgtgggt ggctgggacc tgctgccgag cgcgctgctg 900
agctcgtgtt ccgggcttgt gctgttgaac gcgccgtgg tggcgatgac 950
ccagggaccg cacgatgtgc acgtgcagat cgagacctct cccccggcgc 1000
ggaatctgaa ggtgctgaag gccgacgtgg tgctgctgac ggcgagcgga 1050
ccggcggtga agcgcacac cttctcgccg ccgctgcccc gccacatgca 1100
ggaggcgctg cggaggctgc actacgtgcc ggccaccaag gtgttcctaa 1150
gcttcgcag gcccttctgg cgcgaggagc acattgaagg cggccactca 1200
aacaccgatc gcccgtcgcg catgattttc taccgcgcgc cgcgcgaggg 1250
cgcgctgctg ctggcctcgt acacgtggtc ggacgcggcg gcagcgttcg 1300
ccggcttgag ccgggaagag gcgttgcgct tggcgctcga cgacgtggcg 1350

gcattgcacg ggcctgtcgt gcgccagctc tgggacggca ccggcgtcgt 1400
 caagcggttg gcgaggacc agcacagcca ggggtggcttt gtggtacagc 1450
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 cgcattact ttgccggcga gcacaccgcc taccgcacg gctgggtgga 1550
 gacggcggtc aagtcggcgc tgcgcgccgc catcaagatc aacagccgga 1600
 aggggcctgc atcgacacg gccagccccg aggggcacgc atctgacatg 1650
 gaggggcagg ggcattgtga tgggggtggc agcagcccct cgcattgacct 1700
 ggcaaaggaa gaaggcagcc accctccagt ccaaggccag ttatctctcc 1750
 aaaacacgac ccacacgagg acctcgcat aaagtatttt cggaaaaaaa 1800
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1844

<210> 84

<211> 567

<212> PRT

<213> Homo sapiens

<400> 84

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Pro | Leu | Ala | Leu | His | Leu | Leu | Val | Leu | Val | Pro | Ile | Leu | 1 | 5 | 10 | 15 |
| Leu | Ser | Leu | Val | Ala | Ser | Gln | Asp | Trp | Lys | Ala | Glu | Arg | Ser | Gln | 20 | 25 | 30 | |
| Asp | Pro | Phe | Glu | Lys | Cys | Met | Gln | Asp | Pro | Asp | Tyr | Glu | Gln | Leu | 35 | 40 | 45 | |
| Leu | Lys | Val | Val | Thr | Trp | Gly | Leu | Asn | Arg | Thr | Leu | Lys | Pro | Gln | 50 | 55 | 60 | |
| Arg | Val | Ile | Val | Val | Gly | Ala | Gly | Val | Ala | Gly | Leu | Val | Ala | Ala | 65 | 70 | 75 | |
| Lys | Val | Leu | Ser | Asp | Ala | Gly | His | Lys | Val | Thr | Ile | Leu | Glu | Ala | 80 | 85 | 90 | |
| Asp | Asn | Arg | Ile | Gly | Gly | Arg | Ile | Phe | Thr | Tyr | Arg | Asp | Gln | Asn | 95 | 100 | 105 | |
| Thr | Gly | Trp | Ile | Gly | Glu | Leu | Gly | Ala | Met | Arg | Met | Pro | Ser | Ser | 110 | 115 | 120 | |
| His | Arg | Ile | Leu | His | Lys | Leu | Cys | Gln | Gly | Leu | Gly | Leu | Asn | Leu | 125 | 130 | 135 | |
| Thr | Lys | Phe | Thr | Gln | Tyr | Asp | Lys | Asn | Thr | Trp | Thr | Glu | Val | His | 140 | 145 | 150 | |
| Glu | Val | Lys | Leu | Arg | Asn | Tyr | Val | Val | Glu | Lys | Val | Pro | Glu | Lys | 155 | 160 | 165 | |

| | | | | |
|-----------------|---|-----|-----|-----|
| Leu Gly Tyr Ala | Leu Arg Pro Gln Glu Lys Gly His Ser Pro Glu | 170 | 175 | 180 |
| Asp Ile Tyr Gln | Met Ala Leu Asn Gln Ala Leu Lys Asp Leu Lys | 185 | 190 | 195 |
| Ala Leu Gly Cys | Arg Lys Ala Met Lys Lys Phe Glu Arg His Thr | 200 | 205 | 210 |
| Leu Leu Glu Tyr | Leu Leu Gly Glu Gly Asn Leu Ser Arg Pro Ala | 215 | 220 | 225 |
| Val Gln Leu Leu | Gly Asp Val Met Ser Glu Asp Gly Phe Phe Tyr | 230 | 235 | 240 |
| Leu Ser Phe Ala | Glu Ala Leu Arg Ala His Ser Cys Leu Ser Asp | 245 | 250 | 255 |
| Arg Leu Gln Tyr | Ser Arg Ile Val Gly Gly Trp Asp Leu Leu Pro | 260 | 265 | 270 |
| Arg Ala Leu Leu | Ser Ser Leu Ser Gly Leu Val Leu Leu Asn Ala | 275 | 280 | 285 |
| Pro Val Val Ala | Met Thr Gln Gly Pro His Asp Val His Val Gln | 290 | 295 | 300 |
| Ile Glu Thr Ser | Pro Pro Ala Arg Asn Leu Lys Val Leu Lys Ala | 305 | 310 | 315 |
| Asp Val Val Leu | Leu Thr Ala Ser Gly Pro Ala Val Lys Arg Ile | 320 | 325 | 330 |
| Thr Phe Ser Pro | Pro Leu Pro Arg His Met Gln Glu Ala Leu Arg | 335 | 340 | 345 |
| Arg Leu His Tyr | Val Pro Ala Thr Lys Val Phe Leu Ser Phe Arg | 350 | 355 | 360 |
| Arg Pro Phe Trp | Arg Glu Glu His Ile Glu Gly Gly His Ser Asn | 365 | 370 | 375 |
| Thr Asp Arg Pro | Ser Arg Met Ile Phe Tyr Pro Pro Pro Arg Glu | 380 | 385 | 390 |
| Gly Ala Leu Leu | Leu Ala Ser Tyr Thr Trp Ser Asp Ala Ala Ala | 395 | 400 | 405 |
| Ala Phe Ala Gly | Leu Ser Arg Glu Glu Ala Leu Arg Leu Ala Leu | 410 | 415 | 420 |
| Asp Asp Val Ala | Ala Leu His Gly Pro Val Val Arg Gln Leu Trp | 425 | 430 | 435 |
| Asp Gly Thr Gly | Val Val Lys Arg Trp Ala Glu Asp Gln His Ser | 440 | 445 | 450 |
| Gln Gly Gly Phe | Val Val Gln Pro Pro Ala Leu Trp Gln Thr Glu | | | |

| | | |
|---|-----|-----|
| 455 | 460 | 465 |
| Lys Asp Asp Trp Thr Val Pro Tyr Gly Arg Ile Tyr Phe Ala Gly | | |
| 470 | 475 | 480 |
| Glu His Thr Ala Tyr Pro His Gly Trp Val Glu Thr Ala Val Lys | | |
| 485 | 490 | 495 |
| Ser Ala Leu Arg Ala Ala Ile Lys Ile Asn Ser Arg Lys Gly Pro | | |
| 500 | 505 | 510 |
| Ala Ser Asp Thr Ala Ser Pro Glu Gly His Ala Ser Asp Met Glu | | |
| 515 | 520 | 525 |
| Gly Gln Gly His Val His Gly Val Ala Ser Ser Pro Ser His Asp | | |
| 530 | 535 | 540 |
| Leu Ala Lys Glu Glu Gly Ser His Pro Pro Val Gln Gly Gln Leu | | |
| 545 | 550 | 555 |
| Ser Leu Gln Asn Thr Thr His Thr Arg Thr Ser His | | |
| 560 | 565 | |

<210> 85
 <211> 3316
 <212> DNA
 <213> Homo sapiens

<400> 85
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 ctctgggccg gcctttctgcc tgcattggacg ctctgaagcc accctgtctc 100
 tggaggaacc acgagcggag gaagaaggac agggactcgt gtggcaggaa 150
 gaactcagag ccgggaagcc ccattcact agaagcactg agagatgcgg 200
 cccctcgca gggctctgaat ttctgtctgc tgttcacaaa gatgcttttt 250
 atctttaact ttttgttttc ccacttccg accccggcgt tgatctgcat 300
 cctgacattt ggagctgcc tcttcttggt gctgatcacc agacctcaac 350
 ccgtcttacc tcttcttgac ctgaacaatc agtctgtggg aattgaggga 400
 ggagcacgga aggggggttc ccagaagaac aatgacctaa caagttgctg 450
 cttctcagat gccaaagacta tgtatgaggt tttccaaaga ggactcgtg 500
 tgtctgacaa tgggccctgc ttgggatata gaaaacaaa ccagccctac 550
 agatggctat cttacaaaca ggtgtctgat agagcagagt acctgggttc 600
 ctgtctcttg cataaagggt ataaatcatc accagaccag tttgtcggca 650
 tctttgctca gaataggcca gattggatca tctccgaatt ggcttggtac 700
 acgtactcta tggtagctgt acctctgtat gacaccttgg gaccagaagc 750

ctcttgacac caacattgaa agcaaagcga ggagagcttt ccaaatactt 2250
 tgggacccaa attgacagcc tgtatgagca catccaggat taggataagg 2300
 tacttaagta cctgccggcc cactgtgcac tgcttgtgag aaaatggatt 2350
 aaaaactatt cttacatttg ttttgccttt cctcctatTT ttttttaacc 2400
 tgttaaactc taaagccata gcttttgTTt tatattgaga catataatgt 2450
 gtaaacttag ttcccaaata aatcaatcct gtctttccca tcttcgatgt 2500
 tgctaataatt aaggcttcag ggctactttt atcaacatgc ctgtcttcaa 2550
 gatcccagtt tatgtttctgt gtccttcctc atgatttcca accttaatac 2600
 tattagtaac cacaagttca agggTcaaag ggaccctctg tgccttcttc 2650
 tttgttttgt gataaacata acttgccaac agtctctatg cttattttaca 2700
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 aattcatgtt ttctagccac tccacaaacc actaaaattt tagtttttagc 2800
 ctatcactca tgtcaatcat atctatgaga caaatgtctc cgatgctctt 2850
 ctgcgtaaatt taaattgtgt actgaaggga aaagtttgat cataccaaac 2900
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 ggtctatgac atactgtcca aaaggaatgc tgtttotaaa gcattattta 3000
 cagtaggaac tggggagtaa atctgttccc tacagtttgc tgctgagctg 3050
 gaagctgtgg gggaaggagt tgacaggtgg gccagtgaa cttttccagt 3100
 aaatgaagca agcactgaat aaaaacctcc tgaactggga acaaagatct 3150
 acaggcaagc aagatgccca cacaacaggc ttattttctg tgaaggaacc 3200
 aactgatctc cccaccctt ggattagagt tctgctcta ccttaccac 3250
 agataacaca tgttgtttct acttgtaaatt gtaaagtott taaaataaac 3300
 tattacagat aaaaaa 3316

<210> 86

<211> 739

<212> PRT

<213> Homo sapiens

<400> 86

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Ala | Leu | Lys | Pro | Pro | Cys | Leu | Trp | Arg | Asn | His | Glu | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Lys | Asp | Arg | Asp | Ser | Cys | Gly | Arg | Lys | Asn | Ser | Glu | Pro |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Pro | His | Ser | Leu | Glu | Ala | Leu | Arg | Asp | Ala | Ala | Pro | Ser | 35 | 40 | 45 |
| Gln | Gly | Leu | Asn | Phe | Leu | Leu | Leu | Phe | Thr | Lys | Met | Leu | Phe | Ile | 50 | 55 | 60 |
| Phe | Asn | Phe | Leu | Phe | Ser | Pro | Leu | Pro | Thr | Pro | Ala | Leu | Ile | Cys | 65 | 70 | 75 |
| Ile | Leu | Thr | Phe | Gly | Ala | Ala | Ile | Phe | Leu | Trp | Leu | Ile | Thr | Arg | 80 | 85 | 90 |
| Pro | Gln | Pro | Val | Leu | Pro | Leu | Leu | Asp | Leu | Asn | Asn | Gln | Ser | Val | 95 | 100 | 105 |
| Gly | Ile | Glu | Gly | Gly | Ala | Arg | Lys | Gly | Val | Ser | Gln | Lys | Asn | Asn | 110 | 115 | 120 |
| Asp | Leu | Thr | Ser | Cys | Cys | Phe | Ser | Asp | Ala | Lys | Thr | Met | Tyr | Glu | 125 | 130 | 135 |
| Val | Phe | Gln | Arg | Gly | Leu | Ala | Val | Ser | Asp | Asn | Gly | Pro | Cys | Leu | 140 | 145 | 150 |
| Gly | Tyr | Arg | Lys | Pro | Asn | Gln | Pro | Tyr | Arg | Trp | Leu | Ser | Tyr | Lys | 155 | 160 | 165 |
| Gln | Val | Ser | Asp | Arg | Ala | Glu | Tyr | Leu | Gly | Ser | Cys | Leu | Leu | His | 170 | 175 | 180 |
| Lys | Gly | Tyr | Lys | Ser | Ser | Pro | Asp | Gln | Phe | Val | Gly | Ile | Phe | Ala | 185 | 190 | 195 |
| Gln | Asn | Arg | Pro | Glu | Trp | Ile | Ile | Ser | Glu | Leu | Ala | Cys | Tyr | Thr | 200 | 205 | 210 |
| Tyr | Ser | Met | Val | Ala | Val | Pro | Leu | Tyr | Asp | Thr | Leu | Gly | Pro | Glu | 215 | 220 | 225 |
| Ala | Ile | Val | His | Ile | Val | Asn | Lys | Ala | Asp | Ile | Ala | Met | Val | Ile | 230 | 235 | 240 |
| Cys | Asp | Thr | Pro | Gln | Lys | Ala | Leu | Val | Leu | Ile | Gly | Asn | Val | Glu | 245 | 250 | 255 |
| Lys | Gly | Phe | Thr | Pro | Ser | Leu | Lys | Val | Ile | Ile | Leu | Met | Asp | Pro | 260 | 265 | 270 |
| Phe | Asp | Asp | Asp | Leu | Lys | Gln | Arg | Gly | Glu | Lys | Ser | Gly | Ile | Glu | 275 | 280 | 285 |
| Ile | Leu | Ser | Leu | Tyr | Asp | Ala | Glu | Asn | Leu | Gly | Lys | Glu | His | Phe | 290 | 295 | 300 |
| Arg | Lys | Pro | Val | Pro | Pro | Ser | Pro | Glu | Asp | Leu | Ser | Val | Ile | Cys | 305 | 310 | 315 |
| Phe | Thr | Ser | Gly | Thr | Thr | Gly | Asp | Pro | Lys | Gly | Ala | Met | Ile | Thr | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ile | Tyr | Asn | Arg | Ser | Gln | Pro | Val | Leu | Gln | Ile | Phe | Val | His |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Gly | Glu | Ser | Leu | Arg | Ser | Ser | Leu | Val | Gly | Val | Val | Val | Pro | Asp |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Thr | Asp | Val | Leu | Pro | Ser | Phe | Ala | Ala | Lys | Leu | Gly | Val | Lys | Gly |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Ser | Phe | Glu | Glu | Leu | Cys | Gln | Asn | Gln | Val | Val | Arg | Glu | Ala | Ile |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Leu | Glu | Asp | Leu | Gln | Lys | Ile | Gly | Lys | Glu | Ser | Gly | Leu | Lys | Thr |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Phe | Glu | Gln | Val | Lys | Ala | Ile | Phe | Leu | His | Pro | Glu | Pro | Phe | Ser |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Ile | Glu | Asn | Gly | Leu | Leu | Thr | Pro | Thr | Leu | Lys | Ala | Lys | Arg | Gly |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Glu | Leu | Ser | Lys | Tyr | Phe | Arg | Thr | Gln | Ile | Asp | Ser | Leu | Tyr | Glu |
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| His | Ile | Gln | Asp | | | | | | | | | | | |

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 gaggccatgg tgctattcct caacatggta gcgccggcc gactgtcat 650

GenBank accession number: F01234.1
Sequence type: DNA
Source: Human
Organism: Homo sapiens
Tissue: Blood
Cell type: T-lymphocyte
Library: G1234
Strategy: Sanger
Date: 1998-01-01
Size: 2100 bp
Insert size: 2100 bp
Cloned from: cDNA
Cloning vector: pUC19
Restriction sites: Not present
Comments: This sequence is identical to the one in GenBank.

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<211> 660

<212> PRT

<213> Homo sapiens

<400> 88

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| Met | Asp | Asp | Trp | Lys | Pro | Ser | Pro | Leu | Ile | Lys | Pro | Phe | Gly | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Lys | Lys | Arg | Ser | Trp | Tyr | Leu | Thr | Trp | Lys | Tyr | Lys | Leu | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gln | Arg | Ala | Leu | Arg | Arg | Phe | Cys | Gln | Thr | Gly | Ala | Val | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Leu | Val | Thr | Val | Ile | Val | Asn | Ile | Lys | Leu | Ile | Leu | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Arg | Arg | Ala | Ile | Ser | Glu | Ala | Asn | Glu | Asp | Pro | Glu | Pro | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Asp | Tyr | Asp | Glu | Ala | Leu | Gly | Arg | Leu | Glu | Pro | Pro | Arg | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Gly | Ser | Gly | Pro | Arg | Arg | Val | Leu | Asp | Val | Glu | Val | Tyr | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Ser | Lys | Val | Tyr | Val | Ala | Val | Asp | Gly | Thr | Thr | Val | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asp | Glu | Ala | Arg | Glu | Gln | Gly | Arg | Gly | Ile | His | Val | Ile | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | |
|---|-------------------------|
| Leu Asn Gln Ala Thr Gly His Val Met | Ala Lys Arg Val Phe Asp |
| 140 | 145 150 |
| Thr Tyr Ser Pro His Glu Asp Glu Ala Met | Val Leu Phe Leu Asn |
| 155 | 160 165 |
| Met Val Ala Pro Gly Arg Val Leu Ile Cys | Thr Val Lys Asp Glu |
| 170 | 175 180 |
| Gly Ser Phe His Leu Lys Asp Thr Ala Lys | Ala Leu Leu Arg Ser |
| 185 | 190 195 |
| Leu Gly Ser Gln Ala Gly Pro Ala Leu Gly | Trp Arg Asp Thr Trp |
| 200 | 205 210 |
| Ala Phe Val Gly Arg Lys Gly Gly Pro Val | Phe Gly Glu Lys His |
| 215 | 220 225 |
| Ser Lys Ser Pro Ala Leu Ser Ser Trp Gly | Asp Pro Val Leu Leu |
| 230 | 235 240 |
| Lys Thr Asp Val Pro Leu Ser Ser Ala Glu | Glu Ala Glu Cys His |
| 245 | 250 255 |
| Trp Ala Asp Thr Glu Leu Asn Arg Arg Arg | Arg Arg Arg Phe Cys Ser |
| 260 | 265 270 |
| Lys Val Glu Gly Tyr Gly Ser Val Cys Ser | Cys Lys Asp Pro Thr |
| 275 | 280 285 |
| Pro Ile Glu Phe Ser Pro Asp Pro Leu Pro | Asp Asn Lys Val Leu |
| 290 | 295 300 |
| Asn Val Pro Val Ala Val Ile Ala Gly Asn | Arg Pro Asn Tyr Leu |
| 305 | 310 315 |
| Tyr Arg Met Leu Arg Ser Leu Leu Ser Ala | Gln Gly Val Ser Pro |
| 320 | 325 330 |
| Gln Met Ile Thr Val Phe Ile Asp Gly Tyr | Tyr Glu Glu Pro Met |
| 335 | 340 345 |
| Asp Val Val Ala Leu Phe Gly Leu Arg Gly | Ile Gln His Thr Pro |
| 350 | 355 360 |
| Ile Ser Ile Lys Asn Ala Arg Val Ser Gln | His Tyr Lys Ala Ser |
| 365 | 370 375 |
| Leu Thr Ala Thr Phe Asn Leu Phe Pro Glu | Ala Lys Phe Ala Val |
| 380 | 385 390 |
| Val Leu Glu Glu Asp Leu Asp Ile Ala Val | Asp Phe Phe Ser Phe |
| 395 | 400 405 |
| Leu Ser Gln Ser Ile His Leu Leu Glu Glu | Asp Asp Ser Leu Tyr |
| 410 | 415 420 |
| Cys Ile Ser Ala Trp Asn Asp Gln Gly Tyr | Glu His Thr Ala Glu |

| 425 | | | | | | | | | | 430 | | | | | 435 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Asp | Pro | Ala | Leu | Leu | Tyr | Arg | Val | Glu | Thr | Met | Pro | Gly | Leu | Gly | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Trp | Val | Leu | Arg | Arg | Ser | Leu | Tyr | Lys | Glu | Glu | Leu | Glu | Pro | Lys | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Trp | Pro | Thr | Pro | Glu | Lys | Leu | Trp | Asp | Trp | Asp | Met | Trp | Met | Arg | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Met | Pro | Glu | Gln | Arg | Arg | Gly | Arg | Glu | Cys | Ile | Ile | Pro | Asp | Val | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Ser | Arg | Ser | Tyr | His | Phe | Gly | Ile | Val | Gly | Leu | Asn | Met | Asn | Gly | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Tyr | Phe | His | Glu | Ala | Tyr | Phe | Lys | Lys | His | Lys | Phe | Asn | Thr | Val | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Pro | Gly | Val | Gln | Leu | Arg | Asn | Val | Asp | Ser | Leu | Lys | Lys | Glu | Ala | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Tyr | Glu | Val | Glu | Val | His | Arg | Leu | Leu | Ser | Glu | Ala | Glu | Val | Leu | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Asp | His | Ser | Lys | Asn | Pro | Cys | Glu | Asp | Ser | Phe | Leu | Pro | Asp | Thr | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Glu | Gly | His | Thr | Tyr | Val | Ala | Phe | Ile | Arg | Met | Glu | Lys | Asp | Asp | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Asp | Phe | Thr | Thr | Trp | Thr | Gln | Leu | Ala | Lys | Cys | Leu | His | Ile | Trp | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Asp | Leu | Asp | Val | Arg | Gly | Asn | His | Arg | Gly | Leu | Trp | Arg | Leu | Phe | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Arg | Lys | Lys | Asn | His | Phe | Leu | Val | Val | Gly | Val | Pro | Ala | Ser | Pro | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Tyr | Ser | Val | Lys | Lys | Pro | Pro | Ser | Val | Thr | Pro | Ile | Phe | Leu | Glu | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Pro | Pro | Pro | Lys | Glu | Glu | Gly | Ala | Pro | Gly | Ala | Pro | Glu | Gln | Thr | | | | | |
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<211> 25

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<213> Artificial

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<221> Artificial sequence

<222> 1-25

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<210> 91

<211> 24

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<222> 1-24

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<400> 91

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<212> DNA

<213> Artificial

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<222> 1-26

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<400> 92

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<211> 47

<212> DNA

<213> Artificial

<220>

<221> Artificial sequence

<222> 1-47

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<400> 93

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<210> 94

<211> 3037

<212> DNA

<213> Homo sapiens

<400> 94

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 <212> PRT
 <213> Homo sapiens

<400> 95

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| Met | Asp | Asp | Phe | Ile | Ser | Ile | Ser | Leu | Leu | Ser | Leu | Ala | Met | Leu | 1 | 5 | 10 | 15 |
| Val | Gly | Cys | Tyr | Val | Ala | Gly | Ile | Ile | Pro | Leu | Ala | Val | Asn | Phe | 20 | 25 | 30 | |
| Ser | Glu | Glu | Arg | Leu | Lys | Leu | Val | Thr | Val | Leu | Gly | Ala | Gly | Leu | 35 | 40 | 45 | |
| Leu | Cys | Gly | Thr | Ala | Leu | Ala | Val | Ile | Val | Pro | Glu | Gly | Val | His | 50 | 55 | 60 | |
| Ala | Leu | Tyr | Glu | Asp | Ile | Leu | Glu | Gly | Lys | His | His | Gln | Ala | Ser | 65 | 70 | 75 | |
| Glu | Thr | His | Asn | Val | Ile | Ala | Ser | Asp | Lys | Ala | Ala | Glu | Lys | Ser | 80 | 85 | 90 | |
| Val | Val | His | Glu | His | Glu | His | Ser | His | Asp | His | Thr | Gln | Leu | His | 95 | 100 | 105 | |
| Ala | Tyr | Ile | Gly | Val | Ser | Leu | Val | Leu | Gly | Phe | Val | Phe | Met | Leu | 110 | 115 | 120 | |
| Leu | Val | Asp | Gln | Ile | Gly | Asn | Ser | His | Val | His | Ser | Thr | Asp | Asp | 125 | 130 | 135 | |
| Pro | Glu | Ala | Ala | Arg | Ser | Ser | Asn | Ser | Lys | Ile | Thr | Thr | Thr | Leu | 140 | 145 | 150 | |
| Gly | Leu | Val | Val | His | Ala | Ala | Ala | Asp | Gly | Val | Ala | Leu | Gly | Ala | 155 | 160 | 165 | |
| Ala | Ala | Ser | Thr | Ser | Gln | Thr | Ser | Val | Gln | Leu | Ile | Val | Phe | Val | 170 | 175 | 180 | |
| Ala | Ile | Met | Leu | His | Lys | Ala | Pro | Ala | Ala | Phe | Gly | Leu | Val | Ser | 185 | 190 | 195 | |
| Phe | Leu | Met | His | Ala | Gly | Leu | Glu | Arg | Asn | Arg | Ile | Arg | Lys | His | 200 | 205 | 210 | |
| Leu | Leu | Val | Phe | Ala | Leu | Ala | Ala | Pro | Val | Met | Ser | Met | Val | Thr | 215 | 220 | 225 | |
| Tyr | Leu | Gly | Leu | Ser | Lys | Ser | Ser | Lys | Glu | Ala | Leu | Ser | Glu | Val | | | | |

| | | |
|---|-----|-----|
| 230 | 235 | 240 |
| Asn Ala Thr Gly Val Ala Met Leu Phe Ser Ala Gly Thr Phe Leu | | |
| 245 | 250 | 255 |
| Tyr Val Ala Thr Val His Val Leu Pro Glu Val Gly Gly Ile Gly | | |
| 260 | 265 | 270 |
| His Ser His Lys Pro Asp Ala Thr Gly Gly Arg Gly Leu Ser Arg | | |
| 275 | 280 | 285 |
| Leu Glu Val Ala Ala Leu Val Leu Gly Cys Leu Ile Pro Leu Ile | | |
| 290 | 295 | 300 |
| Leu Ser Val Gly His Gln His | | |
| 305 | | |

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 <212> DNA
 <213> Artificial

 <220>
 <221> Artificial sequence
 <222> 1-25
 <223> Synthetic construct.

 <400> 96
 gttgtgggtg aataaaggag ggcag 25

<210> 97
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35 40 45

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Gly Ala Val Glu Leu Lys Lys Asn Glu Phe Gln Gly Glu Leu Glu
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Lys Gln Arg Glu Gln Leu Asp Lys Ile Gln Ser Ser His Asn Phe
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Gln Leu Glu Ser Val Asn Lys Leu Tyr Gln Asp Glu Lys Ala Val
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Leu Val Asn Asn Ile Thr Thr Gly Glu Arg Leu Ile Arg Val Leu
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Lys Phe Ser Tyr Asp Leu Ser Gln Cys Ile Asn Gln Met Lys Glu
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Asn Val Leu Gly Asn Ser Lys Ser Gln Thr Pro Ala Pro Ser Ser
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|---|-----|-----|-----|
| Glu Val Val Leu Asp Ser Lys Arg Gln Val Glu Lys Glu Glu Thr | 245 | 250 | 255 |
| Asn Glu Ile Gln Val Val Asn Glu Glu Pro Gln Arg Asp Arg Leu | 260 | 265 | 270 |
| Pro Gln Glu Pro Gly Arg Glu Gln Val Val Glu Asp Arg Pro Val | 275 | 280 | 285 |
| Gly Gly Arg Gly Phe Gly Gly Ala Gly Glu Leu Gly Gln Thr Pro | 290 | 295 | 300 |
| Gln Val Gln Ala Ala Leu Ser Val Ser Gln Glu Asn Pro Glu Met | 305 | 310 | 315 |
| Glu Gly Pro Glu Arg Asp Gln Leu Val Ile Pro Asp Gly Gln Glu | 320 | 325 | 330 |
| Glu Glu Gln Glu Ala Ala Gly Glu Gly Arg Asn Gln Gln Lys Leu | 335 | 340 | 345 |
| Arg Gly Glu Asp Asp Tyr Asn Met Asp Glu Asn Glu Ala Glu Ser | 350 | 355 | 360 |
| Glu Thr Asp Lys Gln Ala Ala Leu Ala Gly Asn Asp Arg Asn Ile | 365 | 370 | 375 |
| Asp Val Phe Asn Val Glu Asp Gln Lys Arg Asp Thr Ile Asn Leu | 380 | 385 | 390 |
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<212> PRT

<213> Homo sapiens

<400> 102

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| Met | Gln | Lys | Ala | Ser | Val | Leu | Leu | Phe | Leu | Ala | Trp | Val | Cys | Phe | 1 | 5 | 10 | 15 |
| Leu | Phe | Tyr | Ala | Gly | Ile | Ala | Leu | Phe | Thr | Ser | Gly | Phe | Leu | Leu | 20 | 25 | 30 | |
| Thr | Arg | Leu | Glu | Leu | Thr | Asn | His | Ser | Ser | Cys | Gln | Glu | Pro | Pro | 35 | 40 | 45 | |
| Gly | Pro | Gly | Ser | Leu | Pro | Trp | Gly | Ser | Gln | Gly | Lys | Pro | Gly | Ala | 50 | 55 | 60 | |
| Cys | Trp | Met | Ala | Ser | Arg | Phe | Ser | Arg | Val | Val | Leu | Val | Leu | Ile | 65 | 70 | 75 | |
| Asp | Ala | Leu | Arg | Phe | Asp | Phe | Ala | Gln | Pro | Gln | His | Ser | His | Val | 80 | 85 | 90 | |
| Pro | Arg | Glu | Pro | Pro | Val | Ser | Leu | Pro | Phe | Leu | Gly | Lys | Leu | Ser | 95 | 100 | 105 | |
| Ser | Leu | Gln | Arg | Ile | Leu | Glu | Ile | Gln | Pro | His | His | Ala | Arg | Leu | 110 | 115 | 120 | |
| Tyr | Arg | Ser | Gln | Val | Asp | Pro | Pro | Thr | Thr | Thr | Met | Gln | Arg | Leu | 125 | 130 | 135 | |
| Lys | Ala | Leu | Thr | Thr | Gly | Ser | Leu | Pro | Thr | Phe | Ile | Asp | Ala | Gly | 140 | 145 | 150 | |
| Ser | Asn | Phe | Ala | Ser | His | Ala | Ile | Val | Glu | Asp | Asn | Leu | Ile | Lys | 155 | 160 | 165 | |
| Gln | Leu | Thr | Ser | Ala | Gly | Arg | Arg | Val | Val | Phe | Met | Gly | Asp | Asp | 170 | 175 | 180 | |
| Thr | Trp | Lys | Asp | Leu | Phe | Pro | Gly | Ala | Phe | Ser | Lys | Ala | Phe | Phe | 185 | 190 | 195 | |
| Phe | Pro | Ser | Phe | Asn | Val | Arg | Asp | Leu | Asp | Thr | Val | Asp | Asn | Gly | | | | |

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| Val Leu Ile Ala | His Phe Leu Gly Val | Asp His Cys Gly His | Lys | | |
| | 230 | | 235 | | 240 |
| His Gly Pro His | His Pro Glu Met Ala | Lys Lys Leu Ser Gln | Met | | |
| | 245 | | 250 | | 255 |
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| | 260 | | 265 | | 270 |
| Leu Leu Val Val | Ala Gly Asp His Gly | Met Thr Thr Asn Gly | Asp | | |
| | 275 | | 280 | | 285 |
| His Gly Gly Asp | Ser Glu Leu Glu Val | Ser Ala Ala Leu Phe | Leu | | |
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| Tyr Ser Pro Thr | Ala Val Phe Pro Ser | Thr Pro Pro Glu Glu | Pro | | |
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| Glu Leu Phe Ser | Gly Gly Glu Asp Ser | Gln Pro His Ser Ser | Ala | | |
| | 350 | | 355 | | 360 |
| Leu Ala Gln Ala | Ser Ala Leu His Leu | Asn Ala Gln Gln Val | Ser | | |
| | 365 | | 370 | | 375 |
| Arg Phe Leu His | Thr Tyr Ser Ala Ala | Thr Gln Asp Leu Gln | Ala | | |
| | 380 | | 385 | | 390 |
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| | 395 | | 400 | | 405 |
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| | 410 | | 415 | | 420 |
| Leu Pro Thr Val | Ile Ala Glu Leu Gln | Gln Phe Leu Arg Gly | Ala | | |
| | 425 | | 430 | | 435 |
| Arg Ala Met Cys | Ile Glu Ser Trp Ala | Arg Phe Ser Leu Val | Arg | | |
| | 440 | | 445 | | 450 |
| Met Ala Gly Gly | Thr Ala Leu Leu Ala | Ala Ser Cys Phe Ile | Cys | | |
| | 455 | | 460 | | 465 |
| Leu Leu Ala Ser | Gln Trp Ala Ile Ser | Pro Gly Phe Pro Phe | Cys | | |
| | 470 | | 475 | | 480 |
| Pro Leu Leu Leu | Thr Pro Val Ala Trp | Gly Leu Val Gly Ala | Ile | | |
| | 485 | | 490 | | 495 |

| 785 | 790 | 795 |
|-------------------------------------|-------------------------|------|
| Val Val Pro Gln Ile Tyr Arg His Met | Gln Glu Glu Phe Arg Gly | |
| 800 | 805 | 810 |
| Arg Leu Glu Arg Thr Lys Ser Gln Gly | Pro Leu Thr Val Ala Ala | |
| 815 | 820 | 825 |
| Tyr Gln Leu Gly Ser Val Tyr Ser Ala | Ala Met Val Thr Ala Leu | |
| 830 | 835 | 840 |
| Thr Leu Leu Ala Phe Pro Leu Leu Leu | Leu His Ala Glu Arg Ile | |
| 845 | 850 | 855 |
| Ser Leu Val Phe Leu Leu Leu Phe Leu | Gln Ser Phe Leu Leu Leu | |
| 860 | 865 | 870 |
| His Leu Leu Ala Ala Gly Ile Pro Val | Thr Thr Pro Gly Pro Phe | |
| 875 | 880 | 885 |
| Thr Val Pro Trp Gln Ala Val Ser Ala | Trp Ala Leu Met Ala Thr | |
| 890 | 895 | 900 |
| Gln Thr Phe Tyr Ser Thr Gly His Gln | Pro Val Phe Pro Ala Ile | |
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| His Trp His Ala Ala Phe Val Gly Phe | Pro Glu Gly His Gly Ser | |
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| Cys Thr Trp Leu Pro Ala Leu Leu Val | Gly Ala Asn Thr Phe Ala | |
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| 950 | 955 | 960 |
| Pro Phe Leu Cys Glu Ser Gln Gly Leu | Arg Lys Arg Gln Gln Pro | |
| 965 | 970 | 975 |
| Pro Gly Asn Glu Ala Asp Ala Arg Val | Arg Pro Glu Glu Glu Glu | |
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 cgtgtgtgat tggttcatgc atgtaggctct cttacaatg atgggtgggcc 1650
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<211> 442

<212> PRT

<213> Homo sapiens

<400> 104

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Tyr | Asn | Gly | Leu | His | Gln | Arg | Val | Phe | Lys | Glu | Leu | Lys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Thr | Leu | Cys | Ser | Ile | Ser | Ser | Gln | Ile | Gly | Pro | Pro | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ala | Leu | Thr | Thr | Asp | Glu | Lys | Ser | Ile | Ser | Val | Val | Leu | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Pro | Glu | Lys | Trp | Lys | Arg | Asn | Pro | Glu | Asp | Leu | Pro | Val | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Gln | Ile | Tyr | Ser | Asn | Leu | Lys | Tyr | Asn | Val | Ser | Val | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Thr | Lys | Ser | Asn | Arg | Thr | Trp | Ser | Gln | Cys | Val | Thr | Asn | His |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Leu | Val | Leu | Thr | Trp | Leu | Glu | Pro | Asn | Thr | Leu | Tyr | Cys | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Val | Glu | Ser | Phe | Val | Pro | Gly | Pro | Pro | Arg | Arg | Ala | Gln | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Lys | Gln | Cys | Ala | Arg | Thr | Leu | Lys | Asp | Gln | Ser | Ser | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Lys | Ala | Lys | Ile | Ile | Phe | Trp | Tyr | Val | Leu | Pro | Ile | Ser | Ile |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Phe | Leu | Phe | Ser | Val | Met | Gly | Tyr | Ser | Ile | Tyr | Arg | Tyr |
| | | | | 155 | | | | | 160 | | | | | 165 |

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Ile His Val Gly Lys Glu Lys His Pro Ala Asn Leu Ile Leu Ile
 170 175 180
 Tyr Gly Asn Glu Phe Asp Lys Arg Phe Phe Val Pro Ala Glu Lys
 185 190 195
 Ile Val Ile Asn Phe Ile Thr Leu Asn Ile Ser Asp Asp Ser Lys
 200 205 210
 Ile Ser His Gln Asp Met Ser Leu Leu Gly Lys Ser Ser Asp Val
 215 220 225
 Ser Ser Leu Asn Asp Pro Gln Pro Ser Gly Asn Leu Arg Pro Pro
 230 235 240
 Gln Glu Glu Glu Glu Val Lys His Leu Gly Tyr Ala Ser His Leu
 245 250 255
 Met Glu Ile Phe Cys Asp Ser Glu Glu Asn Thr Glu Gly Thr Ser
 260 265 270
 Leu Thr Gln Gln Glu Ser Leu Ser Arg Thr Ile Pro Pro Asp Lys
 275 280 285
 Thr Val Ile Glu Tyr Glu Tyr Asp Val Arg Thr Thr Asp Ile Cys
 290 295 300
 Ala Gly Pro Glu Glu Gln Glu Leu Ser Leu Gln Glu Glu Val Ser
 305 310 315
 Thr Gln Gly Thr Leu Leu Glu Ser Gln Ala Ala Leu Ala Val Leu
 320 325 330
 Gly Pro Gln Thr Leu Gln Tyr Ser Tyr Thr Pro Gln Leu Gln Asp
 335 340 345
 Leu Asp Pro Leu Ala Gln Glu His Thr Asp Ser Glu Glu Gly Pro
 350 355 360
 Glu Glu Glu Pro Ser Thr Thr Leu Val Asp Trp Asp Pro Gln Thr
 365 370 375
 Gly Arg Leu Cys Ile Pro Ser Leu Ser Ser Phe Asp Gln Asp Ser
 380 385 390
 Glu Gly Cys Glu Pro Ser Glu Gly Asp Gly Leu Gly Glu Glu Gly
 395 400 405
 Leu Leu Ser Arg Leu Tyr Glu Glu Pro Ala Pro Asp Arg Pro Pro
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<400> 106
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<400> 107
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<210> 108
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<220>
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<400> 108
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<210> 110
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<212> DNA
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tctgctgact gtggccaccg ccctgatgct gcccgtaag cccccgcag 150
gtccttgggg ggcccagatc atcgggggcc acgaggtgac cccccactcc 200
aggccctaca tggcatccgt gcgcttcggg ggccaacatc actgcggagg 250
cttcctgctg cgagcccgtt ggggtggtctc ggccgcccac tgcttcagcc 300
acagagacct ccgcaactggc ctggtggtgc tgggcgccc cgtcctgagt 350
actgcggagc ccacccagca ggtgtttggc atcgatgctc tcaccacgca 400
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gccgctccag gcctggaatg ttccgtggct gggccccacg ggaagcctga 1000
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aaaaaaaaaa gaaa 1114

<210> 111

<211> 283

<212> PRT

<213> Homo sapiens

<400> 111

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Gly | Leu | Arg | Gly | Trp | Gly | Arg | Pro | Leu | Leu | Thr | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Thr | Ala | Leu | Met | Leu | Pro | Val | Lys | Pro | Pro | Ala | Gly | Ser | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Ala | Gln | Ile | Ile | Gly | Gly | His | Glu | Val | Thr | Pro | His | Ser | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Tyr | Met | Ala | Ser | Val | Arg | Phe | Gly | Gly | Gln | His | His | Cys | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Phe | Leu | Leu | Arg | Ala | Arg | Trp | Val | Val | Ser | Ala | Ala | His | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Ser | His | Arg | Asp | Leu | Arg | Thr | Gly | Leu | Val | Val | Leu | Gly | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| His | Val | Leu | Ser | Thr | Ala | Glu | Pro | Thr | Gln | Gln | Val | Phe | Gly | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asp | Ala | Leu | Thr | Thr | His | Pro | Asp | Tyr | His | Pro | Met | Thr | His | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Asp | Ile | Cys | Leu | Leu | Arg | Leu | Asn | Gly | Ser | Ala | Val | Leu | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Pro | Ala | Val | Gly | Leu | Leu | Arg | Leu | Pro | Gly | Arg | Arg | Ala | Arg | Pro |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Thr | Ala | Gly | Thr | Arg | Cys | Arg | Val | Ala | Gly | Trp | Gly | Phe | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Asp | Phe | Glu | Glu | Leu | Pro | Pro | Gly | Leu | Met | Glu | Ala | Lys | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Arg | Val | Leu | Asp | Pro | Asp | Val | Cys | Asn | Ser | Ser | Trp | Lys | Gly | His |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Thr | Leu | Thr | Met | Leu | Cys | Thr | Arg | Ser | Gly | Asp | Ser | His | Arg |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Gly | Phe | Cys | Ser | Ala | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Arg |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Asn | Arg | Ala | His | Gly | Leu | Val | Ser | Phe | Ser | Gly | Leu | Trp | Cys | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asp | Pro | Lys | Thr | Pro | Asp | Val | Tyr | Thr | Gln | Val | Ser | Ala | Phe | Val |
| | | | | 245 | | | | | 250 | | | | | 255 |

Ala Trp Ile Trp Asp Val Val Arg Arg Ser Ser Pro Gln Pro Gly
 260 265 270

Pro Leu Pro Gly Thr Thr Arg Pro Pro Gly Glu Ala Ala
 275 280

<210> 112
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 112
 gacgtctgca acagctcctg gaag 24

<210> 113
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 <212> DNA
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<220>
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 <223> Synthetic construct.

<400> 113
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<210> 114
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 <222> 1-44
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<400> 114
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<210> 115
 <211> 1808
 <212> DNA
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<400> 115
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 tatgtcaccg gtggggccttg cccagcaag gccaccatcc ctgggaagac 200

gagagcaggt gcaggtgtca tcccagagttc aggtctctgca cggcatggag 1700
 tgggaacccc accagctgct gctacaggac ctgggattgc ctgggactcc 1750
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<210> 116
 <211> 331
 <212> PRT
 <213> Homo sapiens

<400> 116

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ser | Arg | Tyr | Leu | Leu | Pro | Leu | Ser | Ala | Leu | Gly | Thr | Val | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Ala | Ala | Val | Leu | Leu | Lys | Asp | Tyr | Val | Thr | Gly | Gly | Ala | Cys | |
| | | | 20 | | | | | | 25 | | | | | 30 | |
| Pro | Ser | Lys | Ala | Thr | Ile | Pro | Gly | Lys | Thr | Val | Ile | Val | Thr | Gly | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Ala | Asn | Thr | Gly | Ile | Gly | Lys | Gln | Thr | Ala | Leu | Glu | Leu | Ala | Arg | |
| | | | 50 | | | | | | 55 | | | | | 60 | |
| Arg | Gly | Gly | Asn | Ile | Ile | Leu | Ala | Cys | Arg | Asp | Met | Glu | Lys | Cys | |
| | | | 65 | | | | | | 70 | | | | | 75 | |
| Glu | Ala | Ala | Ala | Lys | Asp | Ile | Arg | Gly | Glu | Thr | Leu | Asn | His | His | |
| | | | 80 | | | | | | 85 | | | | | 90 | |
| Val | Asn | Ala | Arg | His | Leu | Asp | Leu | Ala | Ser | Leu | Lys | Ser | Ile | Arg | |
| | | | 95 | | | | | | 100 | | | | | 105 | |
| Glu | Phe | Ala | Ala | Lys | Ile | Ile | Glu | Glu | Glu | Glu | Arg | Val | Asp | Ile | |
| | | | 110 | | | | | | 115 | | | | | 120 | |
| Leu | Ile | Asn | Asn | Ala | Gly | Val | Met | Arg | Cys | Pro | His | Trp | Thr | Thr | |
| | | | 125 | | | | | | 130 | | | | | 135 | |
| Glu | Asp | Gly | Phe | Glu | Met | Gln | Phe | Gly | Val | Asn | His | Leu | Gly | His | |
| | | | 140 | | | | | | 145 | | | | | 150 | |
| Phe | Leu | Leu | Thr | Asn | Leu | Leu | Leu | Asp | Lys | Leu | Lys | Ala | Ser | Ala | |
| | | | 155 | | | | | | 160 | | | | | 165 | |
| Pro | Ser | Arg | Ile | Ile | Asn | Leu | Ser | Ser | Leu | Ala | His | Val | Ala | Gly | |
| | | | 170 | | | | | | 175 | | | | | 180 | |
| His | Ile | Asp | Phe | Asp | Asp | Leu | Asn | Trp | Gln | Thr | Arg | Lys | Tyr | Asn | |
| | | | 185 | | | | | | 190 | | | | | 195 | |
| Thr | Lys | Ala | Ala | Tyr | Cys | Gln | Ser | Lys | Leu | Ala | Ile | Val | Leu | Phe | |
| | | | 200 | | | | | | 205 | | | | | 210 | |
| Thr | Lys | Glu | Leu | Ser | Arg | Arg | Leu | Gln | Gly | Ser | Gly | Val | Thr | Val | |
| | | | 215 | | | | | | 220 | | | | | 225 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ala | Leu | His | Pro | Gly | Val | Ala | Arg | Thr | Glu | Leu | Gly | Arg | His |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Thr | Gly | Ile | His | Gly | Ser | Thr | Phe | Ser | Ser | Thr | Thr | Leu | Gly | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ile | Phe | Trp | Leu | Leu | Val | Lys | Ser | Pro | Glu | Leu | Ala | Ala | Gln | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ser | Thr | Tyr | Leu | Ala | Val | Ala | Glu | Glu | Leu | Ala | Asp | Val | Ser | Gly |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Lys | Tyr | Phe | Asp | Gly | Leu | Lys | Gln | Lys | Ala | Pro | Ala | Pro | Glu | Ala |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Glu | Asp | Glu | Glu | Val | Ala | Arg | Arg | Leu | Trp | Ala | Glu | Ser | Ala | Arg |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Leu | Val | Gly | Leu | Glu | Ala | Pro | Ser | Val | Arg | Glu | Gln | Pro | Leu | Pro |
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Arg

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 <211> 2249
 <212> DNA
 <213> Homo sapiens

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 gggcgacacg ttctcggcgc tgaccagcgt ggcgcgcgcc ctggcgcccc 150
 agcgccggct gctggggctg ctgaggcggg acctgcgcgg ggaggaggcg 200
 cggctgcggg acctgactag attctacgac aaggtacttt ctttgcata 250
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 aacgcctgca gtctgactgg aggaatgtgg tacatagtct ggaggccagt 350
 gagaacatcc gagctctgaa ggaaggctat gagaaggtgg agcaagacct 400
 tccagccttt gaggaccttg agggagcagc aagggccctg atgcggctgc 450
 aggacgtgta catgctcaat gtgaaaggcc tggcccaggg tgtctttcag 500
 agagtcaact gctctgcat cactgacctg tacagcccca aacggctctt 550
 ttctctcaca ggggatgact gcttccaagt tggcaagggt gcctatgaca 600
 tgggggatta ttaccatgcc attccatggc tggaggaggc tgtcagtctc 650
 ttccgaggat cttacggaga gtggaagaca gaggatgagg caagtctaga 700

tacattatat aaggattttt ttttaagttga aaacaacttt cttttctttt 2200

tgtatgatgg ttttttaaca cagtcattaa aaatgtttat aaatcaaaa 2249

<210> 118

<211> 544

<212> PRT

<213> Homo sapiens

<400> 118

Met Gly Pro Gly Ala Arg Leu Ala Ala Leu Leu Ala Val Leu Ala
1 5 10 15

Leu Gly Thr Gly Asp Pro Glu Arg Ala Ala Ala Arg Gly Asp Thr
20 25 30

Phe Ser Ala Leu Thr Ser Val Ala Arg Ala Leu Ala Pro Glu Arg
35 40 45

Arg Leu Leu Gly Leu Leu Arg Arg Tyr Leu Arg Gly Glu Glu Ala
50 55 60

Arg Leu Arg Asp Leu Thr Arg Phe Tyr Asp Lys Val Leu Ser Leu
65 70 75

His Glu Asp Ser Thr Thr Pro Val Ala Asn Pro Leu Leu Ala Phe
80 85 90

Thr Leu Ile Lys Arg Leu Gln Ser Asp Trp Arg Asn Val Val His
95 100 105

Ser Leu Glu Ala Ser Glu Asn Ile Arg Ala Leu Lys Asp Gly Tyr
110 115 120

Glu Lys Val Glu Gln Asp Leu Pro Ala Phe Glu Asp Leu Glu Gly
125 130 135

Ala Ala Arg Ala Leu Met Arg Leu Gln Asp Val Tyr Met Leu Asn
140 145 150

Val Lys Gly Leu Ala Arg Gly Val Phe Gln Arg Val Thr Gly Ser
155 160 165

Ala Ile Thr Asp Leu Tyr Ser Pro Lys Arg Leu Phe Ser Leu Thr
170 175 180

Gly Asp Asp Cys Phe Gln Val Gly Lys Val Ala Tyr Asp Met Gly
185 190 195

Asp Tyr Tyr His Ala Ile Pro Trp Leu Glu Glu Ala Val Ser Leu
200 205 210

Phe Arg Gly Ser Tyr Gly Glu Trp Lys Thr Glu Asp Glu Ala Ser
215 220 225

Leu Glu Asp Ala Leu Asp His Leu Ala Phe Ala Tyr Phe Arg Ala
230 235 240

| | | | |
|---|-----|-----|-----|
| Gly Asn Val Ser Cys Ala Leu Ser Leu Ser Arg Glu Phe Leu Leu | 245 | 250 | 255 |
| Tyr Ser Pro Asp Asn Lys Arg Met Ala Arg Asn Val Leu Lys Tyr | 260 | 265 | 270 |
| Glu Arg Leu Leu Ala Glu Ser Pro Asn His Val Val Ala Glu Ala | 275 | 280 | 285 |
| Val Ile Gln Arg Pro Asn Ile Pro His Leu Gln Thr Arg Asp Thr | 290 | 295 | 300 |
| Tyr Glu Gly Leu Cys Gln Thr Leu Gly Ser Gln Pro Thr Leu Tyr | 305 | 310 | 315 |
| Gln Ile Pro Ser Leu Tyr Cys Ser Tyr Glu Thr Asn Ser Asn Ala | 320 | 325 | 330 |
| Tyr Leu Leu Leu Gln Pro Ile Arg Lys Glu Val Ile His Leu Glu | 335 | 340 | 345 |
| Pro Tyr Ile Ala Leu Tyr His Asp Phe Val Ser Asp Ser Glu Ala | 350 | 355 | 360 |
| Gln Lys Ile Arg Glu Leu Ala Glu Pro Trp Leu Gln Arg Ser Val | 365 | 370 | 375 |
| Val Ala Ser Gly Glu Lys Gln Leu Gln Val Glu Tyr Arg Ile Ser | 380 | 385 | 390 |
| Lys Ser Ala Trp Leu Lys Asp Thr Val Asp Pro Lys Leu Val Thr | 395 | 400 | 405 |
| Leu Asn His Arg Ile Ala Ala Leu Thr Gly Leu Asp Val Arg Pro | 410 | 415 | 420 |
| Pro Tyr Ala Glu Tyr Leu Gln Val Val Asn Tyr Gly Ile Gly Gly | 425 | 430 | 435 |
| His Tyr Glu Pro His Phe Asp His Ala Thr Ser Pro Ser Ser Pro | 440 | 445 | 450 |
| Leu Tyr Arg Met Lys Ser Gly Asn Arg Val Ala Thr Phe Met Ile | 455 | 460 | 465 |
| Tyr Leu Ser Ser Val Glu Ala Gly Gly Ala Thr Ala Phe Ile Tyr | 470 | 475 | 480 |
| Ala Asn Leu Ser Val Pro Val Val Arg Asn Ala Ala Leu Phe Trp | 485 | 490 | 495 |
| Trp Asn Leu His Arg Ser Gly Glu Gly Asp Ser Asp Thr Leu His | 500 | 505 | 510 |
| Ala Gly Cys Pro Val Leu Val Gly Asp Lys Trp Val Ala Asn Lys | 515 | 520 | 525 |
| Trp Ile His Glu Tyr Gly Gln Glu Phe Arg Arg Pro Cys Ser Ser | | | |

Ser Pro Glu Asp

<210> 119

<211> 23

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 119

cgggacagga gacccagaaa ggg 23

<210> 120

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 120

ggccaagtga tccaaggcat cttc 24

<210> 121

<211> 49

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-49

<223> Synthetic construct.

<400> 121

ctgcgggacc tgactagatt ctacgacaag gtactttott tgcattggg 49

<210> 122

<211> 1778

<212> DNA

<213> Homo sapiens

<400> 122

gagatagggga gtctgggttt aagttcctgc tccatctcag gagcccctgc 50

tcccaccct aggaagccac cagactccac ggtgtggggc caatcaggtg 100

gaatcggccc tggcaggtgg ggccacgagc gctggctgag ggaccgagcc 150

ggagagcccc ggagccccg taaccgcgc ggggagcgcc caggatgccg 200

CGCGGGGACT CGGAGCAGGT GCGCTACTGC GCGCGCTTCT CCTACCTCTG 250
GCTCAAGTTT TCACTTATCA TCTATTCCAC CGTGTTCCTG CTGATTGGGG 300
CCCTGGTCCT GTCTGTGGGC ATCTATGCAG AGGTTGAGCG GCAGAAATAT 350
AAAACCCCTG AAAGTGCCTT CCTGGCTCCA GCCATCATCC TCATCCTCCT 400
GGGCGTCGTC ATGTTTCATG TCTCCTTCAT TGGTGTGCTG GCGTCCCTCC 450
GTGACAACCT GTACCTTCTC CAAGCATTCA TGTACATCCT TGGGATCTGC 500
CTCATCATGG AGCTCATTGG TGGCGTGGTG GCCTTGACCT TCCGGAACCA 550
GACCATTGAC TTCTGAACG ACAACATTCG AAGAGGAATT GAGAATACT 600
ATGATGATCT GGACTTCAAA AACATCATGG ACTTTGTTCA GAAAAAGTTC 650
AAGTGTCTGT GCGGGGAGGA CTACCGAGAT TGGAGCAAGA ATCAGTACCA 700
CGACTGCAGT GCCCCTGGAC CCCTGGCCTG TGGGGTGCCC TACACCTGCT 750
GCATCAGGAA CACGACAGAA GTTGTCAACA CCATGTGTGG CTACAAAACCT 800
ATCGACAAGG AGCGTTTCAG TGTGCAGGAT GTCATCTACG TCGGGGGCTG 850
CACCAACGCC GTGATCATCT GGTTCATGGA CAACCTACACC ATCATGGCGT 900
GCATCCTCCT GGGCATCCTG CTTCCCCAGT TCCTGGGGGT GCTGCTGACG 950
CTGCTGTACA TCACCCGGGT GGAGGACATC ATCATGGAGC ACTCTGTCAC 1000
TGATGGGCTC CTGGGGCCCC GTGCCAAGCC CAGCGTGGAG GCGGCAGGCA 1050
CGGGATGCTG CTTGTGCTAC CCAATTAGG GCCCAGCCTG CCATGGCAGC 1100
TCCAACAAGG ACCGTCTGGG ATAGCACCTC TCAGTCAACA TCGTGGGGCT 1150
GGACAGGGCT GCGGCCCTC TGCCCACT CAGTACTGAC CAAAGCCAGG 1200
GCTGTGTGTG CTTGTGTGTA GGTCCCAAGG CCTCTGCTC CCCAGGGAGC 1250
AGAGCCTGGG CCTCCCTAA GAGGCTTTCC CCGAGGCAGC TCTGGAATCT 1300
GTGCCACCT GGGGCCTGGG GAACAAGGCC CTCCTTTCTC CAGGCCTGGG 1350
CTACAGGGGA GGGAGAGCCT GAGGCTCTGC TCAGGGCCCA TTTTCATCTCT 1400
GGCAGTGCCT TGGCGGTGGT ATTCAAGGCA GTTTTGTAGC ACCTGTAATT 1450
GGGGAGAGGG AGTGTGCCCC TCGGGGCAGG AGGGAAGGGC ATCTGGGGAA 1500
GGGCAGGAGG GAAGAGCTGT CCATGCAGCC ACGCCCATGG CCAGGTTGGC 1550
CTCTTCTCAG CCTCCCAGGT GCCTTGAGCC CTCTTGCAAG GCGGGCTGCT 1600
TCCTTGAGCC TAGTTTTTTT TTACGTGATT TTTGTAACAT TCATTTTTTT 1650

gtacagataa caggagtttc tgactaatca aagctggtat ttccccgcat 1700
 gtcttattct tgcccttccc ccaaccagtt tgттаатcaa асаатааааа 1750
 catgttttgt ttgttttta aaaaaaaa 1778

<210> 123
 <211> 294
 <212> PRT
 <213> Homo sapiens

<400> 123

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Pro | Arg | Gly | Asp | Ser | Glu | Gln | Val | Arg | Tyr | Cys | Ala | Arg | Phe | 1 | 5 | 10 | 15 |
| Ser | Tyr | Leu | Trp | Leu | Lys | Phe | Ser | Leu | Ile | Ile | Tyr | Ser | Thr | Val | 20 | 25 | 30 | |
| Phe | Trp | Leu | Ile | Gly | Ala | Leu | Val | Leu | Ser | Val | Gly | Ile | Tyr | Ala | 35 | 40 | 45 | |
| Glu | Val | Glu | Arg | Gln | Lys | Tyr | Lys | Thr | Leu | Glu | Ser | Ala | Phe | Leu | 50 | 55 | 60 | |
| Ala | Pro | Ala | Ile | Ile | Leu | Ile | Leu | Leu | Gly | Val | Val | Met | Phe | Met | 65 | 70 | 75 | |
| Val | Ser | Phe | Ile | Gly | Val | Leu | Ala | Ser | Leu | Arg | Asp | Asn | Leu | Tyr | 80 | 85 | 90 | |
| Leu | Leu | Gln | Ala | Phe | Met | Tyr | Ile | Leu | Gly | Ile | Cys | Leu | Ile | Met | 95 | 100 | 105 | |
| Glu | Leu | Ile | Gly | Gly | Val | Val | Ala | Leu | Thr | Phe | Arg | Asn | Gln | Thr | 110 | 115 | 120 | |
| Ile | Asp | Phe | Leu | Asn | Asp | Asn | Ile | Arg | Arg | Gly | Ile | Glu | Asn | Tyr | 125 | 130 | 135 | |
| Tyr | Asp | Asp | Leu | Asp | Phe | Lys | Asn | Ile | Met | Asp | Phe | Val | Gln | Lys | 140 | 145 | 150 | |
| Lys | Phe | Lys | Cys | Cys | Gly | Gly | Glu | Asp | Tyr | Arg | Asp | Trp | Ser | Lys | 155 | 160 | 165 | |
| Asn | Gln | Tyr | His | Asp | Cys | Ser | Ala | Pro | Gly | Pro | Leu | Ala | Cys | Gly | 170 | 175 | 180 | |
| Val | Pro | Tyr | Thr | Cys | Cys | Ile | Arg | Asn | Thr | Thr | Glu | Val | Val | Asn | 185 | 190 | 195 | |
| Thr | Met | Cys | Gly | Tyr | Lys | Thr | Ile | Asp | Lys | Glu | Arg | Phe | Ser | Val | 200 | 205 | 210 | |
| Gln | Asp | Val | Ile | Tyr | Val | Arg | Gly | Cys | Thr | Asn | Ala | Val | Ile | Ile | 215 | 220 | 225 | |
| Trp | Phe | Met | Asp | Asn | Tyr | Thr | Ile | Met | Ala | Cys | Ile | Leu | Leu | Gly | | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 230 | 235 | 240 |
| Ile Leu Leu Pro Gln Phe Leu Gly Val | Leu Leu Thr Leu Leu Tyr | |
| 245 | 250 | 255 |
| Ile Thr Arg Val Glu Asp Ile Ile Met | Glu His Ser Val Thr Asp | |
| 260 | 265 | 270 |
| Gly Leu Leu Gly Pro Gly Ala Lys Pro | Ser Val Glu Ala Ala Gly | |
| 275 | 280 | 285 |
| Thr Gly Cys Cys Leu Cys Tyr Pro Asn | | |
| 290 | | |

<210> 124
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-25
 <223> Synthetic construct.

<400> 124
 atcatctatt ccaccgtgtt ctggc 25

<210> 125
 <211> 25
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-25
 <223> Synthetic construct.

<400> 125
 gacagagtgc tccatgatga tgtcc 25

<210> 126
 <211> 50
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-50
 <223> Synthetic construct.

<400> 126
 cctgtctgtg ggcatctatg cagaggttga gcggcagaaa tataaaaccc 50

<210> 127
 <211> 1636
 <212> DNA
 <213> Homo sapiens

<400> 127

gaggagcggg ccgaggactc cagcgtgccc aggtctggca tcctgcactt 50
gctgccctct gacacctggg aagatggccg gcccgaggac cttcaccctt 100
ctctgtggtt tgctggcagc caccttgatc caagccaccc tcagtccac 150
tgcagttctc atcctcggcc caaaagtcac caaagaaaag ctgacacagg 200
agctgaagga ccacaacgcc accagcatcc tgcagcagct gccgctgctc 250
agtgccatgc gggaaaagcc agccggaggc atccctgtgc tgggcagcct 300
ggtgaacacc gtcctgaagc acatcatctg gctgaaggct atcacagcta 350
acatcctcca gctgcagggtg aagccctcgg ccaatgacca ggagctgcta 400
gtcaagatcc ccctggacat ggtggctgga ttcaacacgc ccctggtcaa 450
gaccatcgtg gaggttccaca tgacgactga ggccaagcc accatccgca 500
tggacaccag tgcaagtggc cccacccgcc tggtcctcag tgactgtgcc 550
accagccatg ggagcctgcg catccaactg ctgtataagc tctccttcct 600
ggtgaacgcc ttagctaagc aggtcatgaa cctcctagtgc ccatccctgc 650
ccaatctagt gaaaaaccag ctgtgtcccg tgatcgaggc ttccttcaat 700
ggcatgtatg cagacctcct gcagctggtg aagggtgcca tttccctcag 750
cattgaccgt ctggagtttg accttctgta tcctgccatc aagggtgaca 800
ccattcagct ctacctgggg gccaaagtgtg tggactcaca gggaaagggtg 850
accaagtggg tcaataactc tgcagcttcc ctgacaatgc ccaccctgga 900
caacatcccg ttcagcctca tcgtgagtca ggacgtggtg aaagctgcag 950
tggctgctgt gctctctcca gaagaattca tggctcctgtt ggactctgtg 1000
cttcctgaga gtgcccatcg gctgaagtca agcatcgggc tgatcaatga 1050
aaaggctgca gataagctgg gatctacca gatcgtgaag atcctaactc 1100
aggacactcc cgagtttttt atagaccaag gccatgcca ggtggcccaa 1150
ctgatcgtgc tggaagtgtt tccctccagt gaagccctcc gccctttgtt 1200
caccctgggc atcgaagcca gctcggagc tcagttttac accaaagggtg 1250
accaacttat actcaacttg aataacatca gctctgatcg gatccagctg 1300
atgaactctg ggattggctg gttccaacct gatgttctga aaaacatcat 1350
cactgagatc atccactcca tcctgctgcc gaaccagaat ggcaaattaa 1400
gatctggggg cccagtgtca ttgggtgaagg ccttgggatt cgaggcagct 1450

gagtcctcac tgaccaagga tgcccttggtg cttactccag cctccttggtg 1500
gaaacccagc tctcctgtct cccagtgaag acttggtatgg cagccatcag 1550
ggaaggctgg gtcccagctg ggagtatggg tgtgagctct atagaccatc 1600
cctctctgca atcaataaac acttgccctgt gaaaaa 1636

<210> 128
<211> 484
<212> PRT
<213> Homo sapiens

<400> 128

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Gly | Pro | Trp | Thr | Phe | Thr | Leu | Leu | Cys | Gly | Leu | Leu | Ala | 1 | 5 | 10 | 15 |
| Ala | Thr | Leu | Ile | Gln | Ala | Thr | Leu | Ser | Pro | Thr | Ala | Val | Leu | Ile | 20 | 25 | 30 | |
| Leu | Gly | Pro | Lys | Val | Ile | Lys | Glu | Lys | Leu | Thr | Gln | Glu | Leu | Lys | 35 | 40 | 45 | |
| Asp | His | Asn | Ala | Thr | Ser | Ile | Leu | Gln | Gln | Leu | Pro | Leu | Leu | Ser | 50 | 55 | 60 | |
| Ala | Met | Arg | Glu | Lys | Pro | Ala | Gly | Gly | Ile | Pro | Val | Leu | Gly | Ser | 65 | 70 | 75 | |
| Leu | Val | Asn | Thr | Val | Leu | Lys | His | Ile | Ile | Trp | Leu | Lys | Val | Ile | 80 | 85 | 90 | |
| Thr | Ala | Asn | Ile | Leu | Gln | Leu | Gln | Val | Lys | Pro | Ser | Ala | Asn | Asp | 95 | 100 | 105 | |
| Gln | Glu | Leu | Leu | Val | Lys | Ile | Pro | Leu | Asp | Met | Val | Ala | Gly | Phe | 110 | 115 | 120 | |
| Asn | Thr | Pro | Leu | Val | Lys | Thr | Ile | Val | Glu | Phe | His | Met | Thr | Thr | 125 | 130 | 135 | |
| Glu | Ala | Gln | Ala | Thr | Ile | Arg | Met | Asp | Thr | Ser | Ala | Ser | Gly | Pro | 140 | 145 | 150 | |
| Thr | Arg | Leu | Val | Leu | Ser | Asp | Cys | Ala | Thr | Ser | His | Gly | Ser | Leu | 155 | 160 | 165 | |
| Arg | Ile | Gln | Leu | Leu | Tyr | Lys | Leu | Ser | Phe | Leu | Val | Asn | Ala | Leu | 170 | 175 | 180 | |
| Ala | Lys | Gln | Val | Met | Asn | Leu | Leu | Val | Pro | Ser | Leu | Pro | Asn | Leu | 185 | 190 | 195 | |
| Val | Lys | Asn | Gln | Leu | Cys | Pro | Val | Ile | Glu | Ala | Ser | Phe | Asn | Gly | 200 | 205 | 210 | |
| Met | Tyr | Ala | Asp | Leu | Leu | Gln | Leu | Val | Lys | Val | Pro | Ile | Ser | Leu | 215 | 220 | 225 | |

| | | | | | | | | | | | | | | | | | |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ile | Asp | Arg | Leu | Glu | Phe | Asp | Leu | Leu | Tyr | Pro | Ala | Ile | Lys | 230 | 235 | 240 |
| Gly | Asp | Thr | Ile | Gln | Leu | Tyr | Leu | Gly | Ala | Lys | Leu | Leu | Asp | Ser | 245 | 250 | 255 |
| Gln | Gly | Lys | Val | Thr | Lys | Trp | Phe | Asn | Asn | Ser | Ala | Ala | Ser | Leu | 260 | 265 | 270 |
| Thr | Met | Pro | Thr | Leu | Asp | Asn | Ile | Pro | Phe | Ser | Leu | Ile | Val | Ser | 275 | 280 | 285 |
| Gln | Asp | Val | Val | Lys | Ala | Ala | Val | Ala | Ala | Val | Leu | Ser | Pro | Glu | 290 | 295 | 300 |
| Glu | Phe | Met | Val | Leu | Leu | Asp | Ser | Val | Leu | Pro | Glu | Ser | Ala | His | 305 | 310 | 315 |
| Arg | Leu | Lys | Ser | Ser | Ile | Gly | Leu | Ile | Asn | Glu | Lys | Ala | Ala | Asp | 320 | 325 | 330 |
| Lys | Leu | Gly | Ser | Thr | Gln | Ile | Val | Lys | Ile | Leu | Thr | Gln | Asp | Thr | 335 | 340 | 345 |
| Pro | Glu | Phe | Phe | Ile | Asp | Gln | Gly | His | Ala | Lys | Val | Ala | Gln | Leu | 350 | 355 | 360 |
| Ile | Val | Leu | Glu | Val | Phe | Pro | Ser | Ser | Glu | Ala | Leu | Arg | Pro | Leu | 365 | 370 | 375 |
| Phe | Thr | Leu | Gly | Ile | Glu | Ala | Ser | Ser | Glu | Ala | Gln | Phe | Tyr | Thr | 380 | 385 | 390 |
| Lys | Gly | Asp | Gln | Leu | Ile | Leu | Asn | Leu | Asn | Asn | Ile | Ser | Ser | Asp | 395 | 400 | 405 |
| Arg | Ile | Gln | Leu | Met | Asn | Ser | Gly | Ile | Gly | Trp | Phe | Gln | Pro | Asp | 410 | 415 | 420 |
| Val | Leu | Lys | Asn | Ile | Ile | Thr | Glu | Ile | Ile | His | Ser | Ile | Leu | Leu | 425 | 430 | 435 |
| Pro | Asn | Gln | Asn | Gly | Lys | Leu | Arg | Ser | Gly | Val | Pro | Val | Ser | Leu | 440 | 445 | 450 |
| Val | Lys | Ala | Leu | Gly | Phe | Glu | Ala | Ala | Glu | Ser | Ser | Leu | Thr | Lys | 455 | 460 | 465 |
| Asp | Ala | Leu | Val | Leu | Thr | Pro | Ala | Ser | Leu | Trp | Lys | Pro | Ser | Ser | 470 | 475 | 480 |
| Pro Val Ser Gln | | | | | | | | | | | | | | | | | |

<210> 129
 <211> 2213
 <212> DNA
 <213> Homo sapiens

<400> 129

gagcgaacat ggcagcgcgt tggcgggtttt ggtgtgtctc tgtgaccatg 50
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aaagaaggag atggtgttat ctgaaaaggt tagtcagctg atggaatgga 150
ctaacaaaag acctgtaata agaataatg gagacaagtt ccgtcgcctt 200
gtgaaagccc caccgagaaa ttactccgtt atcgtcatgt tcaactgctct 250
ccaactgcat agacagtgtg tcgtttgcaa gcaagctgat gaagaattcc 300
agatcctggc aaactcctgg cgataactcca gtgcattcac caacaggata 350
ttttttgcca tgggtggattt tgatgaaggc tctgatgtat ttcagatgct 400
aaacatgaat tcagctccaa ctttcatcaa ctttcctgca aaagggaac 450
ccaaacgggg tgatacatat gagttacagg tgcgggggtt ttcagctgag 500
cagattgccc ggtggatcgc cgacagaact gatgtcaata ttagagtgat 550
tagaccccca aattatgctg gtccccttat gttgggattg cttttggctg 600
ttattggtgg acttgtgtat cttcgaagaa gtaatatgga atttctcttt 650
aataaaactg gatgggcttt tgcagctttg tgttttgtgc ttgctatgac 700
atctggtcaa atgtggaacc atataagagg accaccatat gcccataaga 750
atccccacac gggacatgtg aattatatcc atggaagcag tcaagcccag 800
tttgtagctg aaacacacat tgttcttctg tttaatggtg gagttacctt 850
aggaatggtg cttttatgtg aagctgctac ctctgacatg gatattggaa 900
agcgaaagat aatgtgtgtg gctggtattg gacttggtgt attattcttc 950
agttggatgc tctctatttt tagatctaaa tatcatggct acccatacag 1000
ctttctgatg agttaaaaag gtcccagaga tatatagaca ctggagtact 1050
ggaaattgaa aaacgaaaat cgtgtgtgtt tgaaaagaag aatgcaactt 1100
gtatatattt tattacctct ttttttcaag tgatttaa atgttaatcat 1150
ttaaccaaag aagatgtgta gtgccttaac aagcaatcct ctgtcaaaat 1200
ctgaggtatt tgaaaataat tatcctctta accttctctt ccagtgaaac 1250
tttatggaac atttaattta gtacaattaa gtatattata aaaattgtaa 1300
aactactact ttgttttagt tagaacaag ctcaaaacta ctttagtta 1350
cttggtcac tgattttata ttgccttacc caaagatggg gaaagtaagt 1400
cctgaccagg tgttccocaca tatgcctgtt acagataact acattaggaa 1450

ttcatcttta gcttcttcat ctttgtgtgg atgtgtatac tttacgcac 1500
 tttccttttg agtagagaaa ttatgtgtgt catgtggtct tctgaaaatg 1550
 gaacaccatt cttcagagca cacgtctagc cctcagcaag acagttgttt 1600
 ctctcctcc ttgcataatt cctactgcgc tccagcctga gtgatagagt 1650
 gagactctgt ctcaaaaaaa agtatctcta aatacaggat tataatttct 1700
 gcttgagtat ggtgttaact acctgtatt tagaaagatt tcagattcat 1750
 tccatctcct tagttttctt ttaaggtgac ccatctgtga taaaaatata 1800
 gcttagtgct aaaatcagtg taacttatac atggcctaaa atgtttctac 1850
 aaattagagt ttgtcactta ttccatttgt acctaagaga aaaataggct 1900
 cagttagaaa aggactccct ggccaggcgc agtgacttac gcctgtaatc 1950
 tcagcacttt gggaggccaa ggcaggcaga tcacgaggtc aggagtgcga 2000
 gaccatcctg gccaacatgg tgaaaccccg tctctactaa aaatataaaa 2050
 attagctggg tgtggtggca ggagcctgta atcccagcta cacaggaggc 2100
 tgaggcacga gaatcacttg aactcaggag atggaggttt cagtgaagccg 2150
 agatcacgcc actgcactcc agcctggcaa cagagcgaga ctccatctca 2200
 aaaaaaaaaa aaa 2213

<210> 130

<211> 335

<212> PRT

<213> Homo sapiens

<400> 130

Met Ala Ala Arg Trp Arg Phe Trp Cys Val Ser Val Thr Met Val
 1 5 10 15

Val Ala Leu Leu Ile Val Cys Asp Val Pro Ser Ala Ser Ala Gln
 20 25 30

Arg Lys Lys Glu Met Val Leu Ser Glu Lys Val Ser Gln Leu Met
 35 40 45

Glu Trp Thr Asn Lys Arg Pro Val Ile Arg Met Asn Gly Asp Lys
 50 55 60

Phe Arg Arg Leu Val Lys Ala Pro Pro Arg Asn Tyr Ser Val Ile
 65 70 75

Val Met Phe Thr Ala Leu Gln Leu His Arg Gln Cys Val Val Cys
 80 85 90

Lys Gln Ala Asp Glu Glu Phe Gln Ile Leu Ala Asn Ser Trp Arg
 95 100 105

| | | | |
|---|-----|-----|-----|
| Tyr Ser Ser Ala Phe Thr Asn Arg Ile Phe Phe Ala Met Val Asp | 110 | 115 | 120 |
| Phe Asp Glu Gly Ser Asp Val Phe Gln Met Leu Asn Met Asn Ser | 125 | 130 | 135 |
| Ala Pro Thr Phe Ile Asn Phe Pro Ala Lys Gly Lys Pro Lys Arg | 140 | 145 | 150 |
| Gly Asp Thr Tyr Glu Leu Gln Val Arg Gly Phe Ser Ala Glu Gln | 155 | 160 | 165 |
| Ile Ala Arg Trp Ile Ala Asp Arg Thr Asp Val Asn Ile Arg Val | 170 | 175 | 180 |
| Ile Arg Pro Pro Asn Tyr Ala Gly Pro Leu Met Leu Gly Leu Leu | 185 | 190 | 195 |
| Leu Ala Val Ile Gly Gly Leu Val Tyr Leu Arg Arg Ser Asn Met | 200 | 205 | 210 |
| Glu Phe Leu Phe Asn Lys Thr Gly Trp Ala Phe Ala Ala Leu Cys | 215 | 220 | 225 |
| Phe Val Leu Ala Met Thr Ser Gly Gln Met Trp Asn His Ile Arg | 230 | 235 | 240 |
| Gly Pro Pro Tyr Ala His Lys Asn Pro His Thr Gly His Val Asn | 245 | 250 | 255 |
| Tyr Ile His Gly Ser Ser Gln Ala Gln Phe Val Ala Glu Thr His | 260 | 265 | 270 |
| Ile Val Leu Leu Phe Asn Gly Gly Val Thr Leu Gly Met Val Leu | 275 | 280 | 285 |
| Leu Cys Glu Ala Ala Thr Ser Asp Met Asp Ile Gly Lys Arg Lys | 290 | 295 | 300 |
| Ile Met Cys Val Ala Gly Ile Gly Leu Val Val Leu Phe Phe Ser | 305 | 310 | 315 |
| Trp Met Leu Ser Ile Phe Arg Ser Lys Tyr His Gly Tyr Pro Tyr | 320 | 325 | 330 |
| Ser Phe Leu Met Ser | 335 | | |

<210> 131

<211> 2476

<212> DNA

<213> Homo sapiens

<400> 131

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 aactggacta tacttcagga catcactcca ttagtaatcg tgtggaagcg 550
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 gcatgtacga ggctagtga catgttccgc ttttgatgat gggaccagga 1150
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<210> 134

<211> 230

<212> PRT

<213> Homo sapiens

<400> 134

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Leu | Gly | Leu | Gln | Leu | Val | Gly | Tyr | Ile | Leu | Gly | Leu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Leu | Leu | Gly | Thr | Leu | Val | Ala | Met | Leu | Leu | Pro | Ser | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Thr | Ser | Ser | Tyr | Val | Gly | Ala | Ser | Ile | Val | Thr | Ala | Val | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ser | Lys | Gly | Leu | Trp | Met | Glu | Cys | Ala | Thr | His | Ser | Thr | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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| 50 | 55 | 60 |
|---|-----|-----|
| Ile Thr Gln Cys Asp Ile Tyr Ser Thr Leu Leu Gly Leu Pro Ala | | |
| 65 | 70 | 75 |
| Asp Ile Gln Ala Ala Gln Ala Met Met Val Thr Ser Ser Ala Ile | | |
| 80 | 85 | 90 |
| Ser Ser Leu Ala Cys Ile Ile Ser Val Val Gly Met Arg Cys Thr | | |
| 95 | 100 | 105 |
| Val Phe Cys Gln Glu Ser Arg Ala Lys Asp Arg Val Ala Val Ala | | |
| 110 | 115 | 120 |
| Gly Gly Val Phe Phe Ile Leu Gly Gly Leu Leu Gly Phe Ile Pro | | |
| 125 | 130 | 135 |
| Val Ala Trp Asn Leu His Gly Ile Leu Arg Asp Phe Tyr Ser Pro | | |
| 140 | 145 | 150 |
| Leu Val Pro Asp Ser Met Lys Phe Glu Ile Gly Glu Ala Leu Tyr | | |
| 155 | 160 | 165 |
| Leu Gly Ile Ile Ser Ser Leu Phe Ser Leu Ile Ala Gly Ile Ile | | |
| 170 | 175 | 180 |
| Leu Cys Phe Ser Cys Ser Ser Gln Arg Asn Arg Ser Asn Tyr Tyr | | |
| 185 | 190 | 195 |
| Asp Ala Tyr Gln Ala Gln Pro Leu Ala Thr Arg Ser Ser Pro Arg | | |
| 200 | 205 | 210 |
| Pro Gly Gln Pro Pro Lys Val Lys Ser Glu Phe Asn Ser Tyr Ser | | |
| 215 | 220 | 225 |
| Leu Thr Gly Tyr Val | | |
| 230 | | |

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 <211> 610
 <212> DNA
 <213> Homo sapiens

<400> 135
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 aagtcacgcg tcccgtggc tcagaacctt ggctgtgcca gccggcaccc 150
 aggtgtggag acaagatcta caaccocctt gagcagtgct gttacaatga 200
 cgccatcgtg tccctgagcg agaccgcca atgtggtccc ccctgcacct 250
 tctggccctg ctttgagctc tgctgtcttg attccttttg cctcaciaaac 300
 gattttgttg tgaagctgaa ggttcagggt gtgaattccc agtgccactc 350

atctcccatc tccagtaa at gtgaaagcag aagacgtttt ccctgagaag 400
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 aggtaatatg tgtaccagta gagaagcctg aggaatttac aaaatgatgc 500
 agctccaagc cattgtatgg cccatgtggg agactgatgg gacatggaga 550
 atgacagtag attatcagga aataaataaa gtgggtttttc caatgtacac 600
 acctgtaaaa 610

<210> 136
 <211> 119
 <212> PRT
 <213> Homo sapiens

<400> 136
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 35 40 45
 Asn Pro Leu Glu Gln Cys Cys Tyr Asn Asp Ala Ile Val Ser Leu
 50 55 60
 Ser Glu Thr Arg Gln Cys Gly Pro Pro Cys Thr Phe Trp Pro Cys
 65 70 75
 Phe Glu Leu Cys Cys Leu Asp Ser Phe Gly Leu Thr Asn Asp Phe
 80 85 90
 Val Val Lys Leu Lys Val Gln Gly Val Asn Ser Gln Cys His Ser
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 Ser Pro Ile Ser Ser Lys Cys Glu Ser Arg Arg Arg Phe Pro
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<210> 137
 <211> 771
 <212> DNA
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 gtggggacaa gttctacgac cccctgcagc actgttgcta tgatgatgcc 200
 gtcgtgccct tggccaggac ccagacgtgt ggaaactgca ctttcagagt 250

ctgctttgag cagtgtgcc cctggacctt catggtgaag ctgataaacc 300
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 tgggcctgga gaaagaggct ggtgttacct gagatctggg atgctgagtg 450
 gctgtttggg ggccagagaa acacacactc aactgcccac ttcattctgt 500
 gacctgtctg aggcccaccc tgcagctgcc ctgaggaggc ccacaggtcc 550
 ccttctagaa ttctggacag catgagatgc gtgtgctgat gggggcccag 600
 ggactctgaa ccctcctgat gaccctatg gccaacatca acccggcacc 650
 accccaaggc tggctgggga acccttcacc cttctgtgag attttccatc 700
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<210> 138

<211> 110

<212> PRT

<213> Homo sapiens.

<400> 138

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Arg | Gly | Cys | Ile | Val | Ala | Val | Phe | Ala | Ile | Phe | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Arg | Leu | Leu | Cys | Ser | His | Gly | Ala | Pro | Val | Ala | Pro | Met |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Tyr | Leu | Met | Leu | Cys | Gln | Pro | His | Lys | Arg | Cys | Gly | Asp |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Phe | Tyr | Asp | Pro | Leu | Gln | His | Cys | Cys | Tyr | Asp | Asp | Ala | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Leu | Ala | Arg | Thr | Gln | Thr | Cys | Gly | Asn | Cys | Thr | Phe | Arg |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Cys | Phe | Glu | Gln | Cys | Cys | Pro | Trp | Thr | Phe | Met | Val | Lys | Leu |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asn | Gln | Asn | Cys | Asp | Ser | Ala | Arg | Thr | Ser | Asp | Asp | Arg | Leu |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | |
|-----|-----|-----|-----|-----|
| Cys | Arg | Ser | Val | Ser |
| | | | | 110 |

<210> 139

<211> 2044

<212> DNA

<213> Homo sapiens

<400> 139

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 ctccccggca ccagaagttc ctctgcgcgt ccgacggcga catgggcgtc 150
 cccacggccc tggaggccgg cagctggcgc tggggatccc tgetcttcgc 200
 tctcttcttg gctgctcccc taggtccggt ggcagccttc aaggtcgcca 250
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 caccaggctg ccaacaccag ccacgacctg gctcagcgcc acgggctgga 500
 gtcggcctcc gaccaccatg gcaacttctc catcaccatg cgcaacctga 550
 ccctgctgga tagcggcctc tactgctgcc tgggtggtgga gatcaggcac 600
 caccactcgg agcacagggt ccatggtgcc atggagctgc aggtgcagac 650
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 <211> 311
 <212> PRT
 <213> Homo sapiens

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 Ala Ala Phe Lys Val Ala Thr Pro Tyr Ser Leu Tyr Val Cys Pro
 35 40 45
 Glu Gly Gln Asn Val Thr Leu Thr Cys Arg Leu Leu Gly Pro Val
 50 55 60
 Asp Lys Gly His Asp Val Thr Phe Tyr Lys Thr Trp Tyr Arg Ser
 65 70 75
 Ser Arg Gly Glu Val Gln Thr Cys Ser Glu Arg Arg Pro Ile Arg
 80 85 90
 Asn Leu Thr Phe Gln Asp Leu His Leu His His Gly Gly His Gln
 95 100 105
 Ala Ala Asn Thr Ser His Asp Leu Ala Gln Arg His Gly Leu Glu
 110 115 120
 Ser Ala Ser Asp His His Gly Asn Phe Ser Ile Thr Met Arg Asn
 125 130 135
 Leu Thr Leu Leu Asp Ser Gly Leu Tyr Cys Cys Leu Val Val Glu

140 145 150
155 160 165
170 175 180
185 190 195
200 205 210
215 220 225
230 235 240
245 250 255
260 265 270
275 280 285
290 295 300
305 310

| | | |
|-------------------------------------|-------------------------|-----|
| Ile Arg His His His Ser Glu His Arg | Val His Gly Ala Met Glu | |
| 155 | 160 | 165 |
| Leu Gln Val Gln Thr Gly Lys Asp Ala | Pro Ser Asn Cys Val Val | |
| 170 | 175 | 180 |
| Tyr Pro Ser Ser Ser Gln Asp Ser Glu | Asn Ile Thr Ala Ala Ala | |
| 185 | 190 | 195 |
| Leu Ala Thr Gly Ala Cys Ile Val Gly | Ile Leu Cys Leu Pro Leu | |
| 200 | 205 | 210 |
| Ile Leu Leu Leu Val Tyr Lys Gln Arg | Gln Ala Ala Ser Asn Arg | |
| 215 | 220 | 225 |
| Arg Ala Gln Glu Leu Val Arg Met Asp | Ser Asn Ile Gln Gly Ile | |
| 230 | 235 | 240 |
| Glu Asn Pro Gly Phe Glu Ala Ser Pro | Pro Ala Gln Gly Ile Pro | |
| 245 | 250 | 255 |
| Glu Ala Lys Val Arg His Pro Leu Ser | Tyr Val Ala Gln Arg Gln | |
| 260 | 265 | 270 |
| Pro Ser Glu Ser Gly Arg His Leu Leu | Ser Glu Pro Ser Thr Pro | |
| 275 | 280 | 285 |
| Leu Ser Pro Pro Gly Pro Gly Asp Val | Phe Phe Pro Ser Leu Asp | |
| 290 | 295 | 300 |
| Pro Val Pro Asp Ser Pro Asn Phe Glu | Val Ile | |
| 305 | 310 | |

<210> 141
<211> 1732
<212> DNA
<213> Homo sapiens

<400> 141
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tctctccctc ctttccccgc gttctctttc cacctttctc ttcttccac 100
cttagacctc ccttctgccc ctcccttctc gccaccgct gcttctggc 150
ccttctccga cccgctcta gcagcagacc tcttgggggc tgtgggttga 200
tctgtggccc ctgtgcctcc gtgtcctttt cgtctccctt cctcccgact 250
ccgctcccgc accagcgccc tgacctggg gaaaggatgg ttcccaggt 300
gagggtcctc tctccttgc tgggactgc gctgctctgg ttcccctgg 350
actcccacgc tcgagccgc ccagacatgt tctgcctttt ccatgggaag 400
agatactccc ccggcgagag ctggcacccc tacttggagc cacaaggcct 450

Met Val Pro Glu Val Arg Val Leu Ser Ser Leu Leu Gly Leu Ala
 1 5 10 15
 Leu Leu Trp Phe Pro Leu Asp Ser His Ala Arg Ala Arg Pro Asp
 20 25 30
 Met Phe Cys Leu Phe His Gly Lys Arg Tyr Ser Pro Gly Glu Ser
 35 40 45
 Trp His Pro Tyr Leu Glu Pro Gln Gly Leu Met Tyr Cys Leu Arg
 50 55 60
 Cys Thr Cys Ser Glu Gly Ala His Val Ser Cys Tyr Arg Leu His
 65 70 75
 Cys Pro Pro Val His Cys Pro Gln Pro Val Thr Glu Pro Gln Gln
 80 85 90
 Cys Cys Pro Lys Cys Val Glu Pro His Thr Pro Ser Gly Leu Arg
 95 100 105
 Ala Pro Pro Lys Ser Cys Gln His Asn Gly Thr Met Tyr Gln His
 110 115 120
 Gly Glu Ile Phe Ser Ala His Glu Leu Phe Pro Ser Arg Leu Pro
 125 130 135
 Asn Gln Cys Val Leu Cys Ser Cys Thr Glu Gly Gln Ile Tyr Cys
 140 145 150
 Gly Leu Thr Thr Cys Pro Glu Pro Gly Cys Pro Ala Pro Leu Pro
 155 160 165
 Leu Pro Asp Ser Cys Cys Gln Ala Cys Lys Asp Glu Ala Ser Glu
 170 175 180
 Gln Ser Asp Glu Glu Asp Ser Val Gln Ser Leu His Gly Val Arg
 185 190 195
 His Pro Gln Asp Pro Cys Ser Ser Asp Ala Gly Arg Lys Arg Gly
 200 205 210
 Pro Gly Thr Pro Ala Pro Thr Gly Leu Ser Ala Pro Leu Ser Phe
 215 220 225
 Ile Pro Arg His Phe Arg Pro Lys Gly Ala Gly Ser Thr Thr Val
 230 235 240
 Lys Ile Val Leu Lys Glu Lys His Lys Lys Ala Cys Val His Gly
 245 250 255
 Gly Lys Thr Tyr Ser His Gly Glu Val Trp His Pro Ala Phe Arg
 260 265 270
 Ala Phe Gly Pro Leu Pro Cys Ile Leu Cys Thr Cys Glu Asp Gly
 275 280 285
 Arg Gln Asp Cys Gln Arg Val Thr Cys Pro Thr Glu Tyr Pro Cys

| 290 | 295 | 300 |
|---|-----|-----|
| Arg His Pro Glu Lys Val Ala Gly Lys Cys Cys Lys Ile Cys Pro | | |
| 305 | 310 | 315 |
| Glu Asp Lys Ala Asp Pro Gly His Ser Glu Ile Ser Ser Thr Arg | | |
| 320 | 325 | 330 |
| Cys Pro Lys Ala Pro Gly Arg Val Leu Val His Thr Ser Val Ser | | |
| 335 | 340 | 345 |
| Pro Ser Pro Asp Asn Leu Arg Arg Phe Ala Leu Glu His Glu Ala | | |
| 350 | 355 | 360 |
| Ser Asp Leu Val Glu Ile Tyr Leu Trp Lys Leu Val Lys Asp Glu | | |
| 365 | 370 | 375 |
| Glu Thr Glu Ala Gln Arg Gly Glu Val Pro Gly Pro Arg Pro His | | |
| 380 | 385 | 390 |
| Ser Gln Asn Leu Pro Leu Asp Ser Asp Gln Glu Ser Gln Glu Ala | | |
| 395 | 400 | 405 |
| Arg Leu Pro Glu Arg Gly Thr Ala Leu Pro Thr Ala Arg Trp Pro | | |
| 410 | 415 | 420 |
| Pro Arg Arg Ser Leu Glu Arg Leu Pro Ser Pro Asp Pro Gly Ala | | |
| 425 | 430 | 435 |
| Glu Gly His Gly Gln Ser Arg Gln Ser Asp Gln Asp Ile Thr Lys | | |
| 440 | 445 | 450 |

Thr

<210> 143
 <211> 693
 <212> DNA
 <213> Homo sapiens

<400> 143
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 cggggagctc ccgtgggcgc tccgctggct gtgcaggcgg ccatggattc 100
 cttgcggaaa atgctgatct cagtcgcaat gctgggcgca ggggctggcg 150
 tgggctacgc gctcctcggt atcgtgacct cgaggagagc gcggaagcag 200
 gaaatgctaa aggagatgcc actgcaggac ccaaggagca gggaggaggc 250
 ggccaggacc cagcagctat tgctggccac totgcaggag gcagcgacca 300
 cgcaggagaa cgtggcctgg aggaagaact ggatggttgg cggcgaaggc 350
 ggcgccagcg ggaggtcacc gtgagaccgg acttgctctc gtgggcgccg 400
 gaccttggct tgggcgcagg aatccgaggc agcctttctc cttcgtgggc 450

ccagcggaga gtccggaccg agataccatg ccaggactct ccggggtcct 500
 gtgagctgcc gtgggtgag cacgtttccc ccaaaccctg gactgactgc 550
 ttttaaggtcc gcaaggcggg ccagggccga gacgcgagtc ggatgtggtg 600
 aactgaaaga accaataaaa tcatgttcct ccaaaaaaaaa aaaaaaaaaa 650
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 693

<210> 144
 <211> 93
 <212> PRT
 <213> Homo sapiens

<400> 144
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 Ala Gly Ala Gly Val Gly Tyr Ala Leu Leu Val Ile Val Thr Pro
 20 25 30
 Gly Glu Arg Arg Lys Gln Glu Met Leu Lys Glu Met Pro Leu Gln
 35 40 45
 Asp Pro Arg Ser Arg Glu Glu Ala Ala Arg Thr Gln Gln Leu Leu
 50 55 60
 Leu Ala Thr Leu Gln Glu Ala Ala Thr Thr Gln Glu Asn Val Ala
 65 70 75
 Trp Arg Lys Asn Trp Met Val Gly Gly Glu Gly Gly Ala Ser Gly
 80 85 90
 Arg Ser Pro

<210> 145
 <211> 1883
 <212> DNA
 <213> Homo sapiens

<400> 145
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 ttgaggggaa gaggtgact gtacgttcct tctactctgg caccactctc 100
 caggctgcca tggggcccag caccctctc ctcattttgt tccttttgtc 150
 atggtcggga cccctccaag gacagcagca ccaccttggt gagtacatgg 200
 aacgccgact agctgcttta gaggaacggc tggcccagtg ccaggaccag 250
 agtagtcggc atgctgctga gctgcgggac ttcaagaaca agatgctgcc 300
 actgctggag gtggcagaga aggagcggga ggcactcaga actgaggccg 350
 acaccatctc cgggagagtg gatcgtctgg agcgggaggt agactatctg 400

gagacccaga acccagctct gccctgtgta gagtttgatg agaaggtgac 450
tggaggccct gggaccaaag gcaagggaag aaggaatgag aagtacgata 500
tggtgacaga ctgtggctac acaatctctc aagtgagatc aatgaagatt 550
ctgaagcgat ttggtggccc agctggtcta tggaccaagg atccactggg 600
gcaaacagag aagatctacg tgttagatgg gacacagaat gacacagcct 650
ttgtcttccc aaggctgcgt gacttcaccc ttgccatggc tgcccggaaa 700
gcttcccagag tccgggtgcc ctccccctgg gtaggcacag ggcagctggt 750
atatggtggc tttctttatt ttgctcggag gcctcctgga agacctggtg 800
gaggtggtga gatggagaac actttgcagc taatcaaatt ccacctggca 850
aaccgaacag tgggtggacag ctcaagtatt ccagcagagg ggctgatccc 900
cccctaaggc ttgacagcag acacctacat cgacctggta gctgatgagg 950
aaggtotttg ggctgtctat gccacccggg aggatgacag gcaacttgtgt 1000
ctggccaagt tagatccaca gacactggac acagagcagc agtgggacac 1050
accatgtccc agagagaatg ctgaggctgc ctttgtcatc tgtgggaccc 1100
tctatgtcgt ctataacacc cgtcctgcca gtcgggcccg catccagtgc 1150
tcctttgatg ccagcggcac cctgaccct gaacgggcag cactccctta 1200
ttttccccgc agatatggtg cccatgccag cctccgctat aacccccgag 1250
aacgccagct ctatgcctgg gatgatggct accagattgt ctataagctg 1300
gagatgagga agaaagagga ggaggtttga ggagctagcc ttgttttttg 1350
catctttctc actcccatc atttatatta tatccccact aaattttctg 1400
ttcctcattc ttcaaagtgt gccagttgt ggctcaaata ctctatatatt 1450
ttagccaatg gcaatcaaat tctttcagct cctttgtttc atacggaact 1500
ccagatcctg agtaatcctt ttagagcccg aagagtcaaa accctcaatg 1550
ttccctcctg ctctcctgcc ccatgtcaac aaatttcagg ctaaggatgc 1600
cccagacca gggctctaac cttgtatgcg ggcaggccca gggagcaggc 1650
agcagtgttc ttccccctcag agtgacttgg ggaggagagaa ataggaggag 1700
acgtccagct ctgtcctctc ttcctcactc ctcccttcag tgtcctgagg 1750
aacaggactt tctccacatt gttttgtatt gcaacatfff gcattaaaag 1800
gaaaatccac aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1850

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1883

<210> 146

<211> 406

<212> PRT

<213> Homo sapiens

<400> 146

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Pro | Ser | Thr | Pro | Leu | Leu | Ile | Leu | Phe | Leu | Leu | Ser | Trp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Gly | Pro | Leu | Gln | Gly | Gln | Gln | His | His | Leu | Val | Glu | Tyr | Met |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Glu | Arg | Arg | Leu | Ala | Ala | Leu | Glu | Glu | Arg | Leu | Ala | Gln | Cys | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asp | Gln | Ser | Ser | Arg | His | Ala | Ala | Glu | Leu | Arg | Asp | Phe | Lys | Asn |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Met | Leu | Pro | Leu | Leu | Glu | Val | Ala | Glu | Lys | Glu | Arg | Glu | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Arg | Thr | Glu | Ala | Asp | Thr | Ile | Ser | Gly | Arg | Val | Asp | Arg | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Glu | Arg | Glu | Val | Asp | Tyr | Leu | Glu | Thr | Gln | Asn | Pro | Ala | Leu | Pro |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Cys | Val | Glu | Phe | Asp | Glu | Lys | Val | Thr | Gly | Gly | Pro | Gly | Thr | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Lys | Gly | Arg | Arg | Asn | Glu | Lys | Tyr | Asp | Met | Val | Thr | Asp | Cys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Tyr | Thr | Ile | Ser | Gln | Val | Arg | Ser | Met | Lys | Ile | Leu | Lys | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Gly | Gly | Pro | Ala | Gly | Leu | Trp | Thr | Lys | Asp | Pro | Leu | Gly | Gln |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Thr | Glu | Lys | Ile | Tyr | Val | Leu | Asp | Gly | Thr | Gln | Asn | Asp | Thr | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Phe | Val | Phe | Pro | Arg | Leu | Arg | Asp | Phe | Thr | Leu | Ala | Met | Ala | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Arg | Lys | Ala | Ser | Arg | Val | Arg | Val | Pro | Phe | Pro | Trp | Val | Gly | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gly | Gln | Leu | Val | Tyr | Gly | Gly | Phe | Leu | Tyr | Phe | Ala | Arg | Arg | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Pro | Gly | Arg | Pro | Gly | Gly | Gly | Gly | Glu | Met | Glu | Asn | Thr | Leu | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Ile | Lys | Phe | His | Leu | Ala | Asn | Arg | Thr | Val | Val | Asp | Ser | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Pro | Ala | Glu | Gly | Leu | Ile | Pro | Pro | Tyr | Gly | Leu | Thr | Ala | 260 | 265 | 270 |
| Asp | Thr | Tyr | Ile | Asp | Leu | Val | Ala | Asp | Glu | Glu | Gly | Leu | Trp | Ala | 275 | 280 | 285 |
| Val | Tyr | Ala | Thr | Arg | Glu | Asp | Asp | Arg | His | Leu | Cys | Leu | Ala | Lys | 290 | 295 | 300 |
| Leu | Asp | Pro | Gln | Thr | Leu | Asp | Thr | Glu | Gln | Gln | Trp | Asp | Thr | Pro | 305 | 310 | 315 |
| Cys | Pro | Arg | Glu | Asn | Ala | Glu | Ala | Ala | Phe | Val | Ile | Cys | Gly | Thr | 320 | 325 | 330 |
| Leu | Tyr | Val | Val | Tyr | Asn | Thr | Arg | Pro | Ala | Ser | Arg | Ala | Arg | Ile | 335 | 340 | 345 |
| Gln | Cys | Ser | Phe | Asp | Ala | Ser | Gly | Thr | Leu | Thr | Pro | Glu | Arg | Ala | 350 | 355 | 360 |
| Ala | Leu | Pro | Tyr | Phe | Pro | Arg | Arg | Tyr | Gly | Ala | His | Ala | Ser | Leu | 365 | 370 | 375 |
| Arg | Tyr | Asn | Pro | Arg | Glu | Arg | Gln | Leu | Tyr | Ala | Trp | Asp | Asp | Gly | 380 | 385 | 390 |
| Tyr | Gln | Ile | Val | Tyr | Lys | Leu | Glu | Met | Arg | Lys | Lys | Glu | Glu | Glu | 395 | 400 | 405 |

Val

<210> 147
 <211> 2052
 <212> DNA
 <213> Homo sapiens

<400> 147
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 gttctctctt tctctctaatt ccatccgtca cctctcctgt catccgtttc 150
 catgccgtga ggtccattca cagaacacat ccatggctct catgctcagt 200
 ttggttctga gtctcctcaa gctgggatca gggcagtggc aggtgttttg 250
 gccagacaag cctgtccagg ccttggtggg ggaggacgca gcattctcct 300
 gtttctctgt tcctaagacc aatgcagagg ccatggaagt gcggttcttc 350
 agggggccagt tctctagcgt ggtccacctc tacagggacg ggaaggacca 400
 gccatttatg cagatgccac agtatcaagg caggacaaaa ctggtgaagg 450
 attctattgc ggaggggcgc atctctctga ggctggaaaa cattactgtg 500

ttggatgctg gcctctatgg gtgcaggatt agttcccagt cttactacca 550
 gaaggccatc tgggagctac aggtgtcagc actgggctca gttcctctca 600
 tttccatcac gggatatgtt gatagagaca tccagctact ctgtcagtcc 650
 tcgggctggg tcccccgcc cacagcgaag tggaaaggct cacaaggaca 700
 ggatttgtcc acagactcca ggacaaacag agacatgcat ggctgtttg 750
 atgtggagat ctctctgacc gtccaagaga acgccgggag catatcctgt 800
 tccatgcggc atgctcatct gagccgagag gtggaatcca gggtagagat 850
 aggagatacc tttttcgagc ctatatcgtg gcacctggct accaaagtac 900
 tgggaatact ctgctgtggc ctattttttg gcattgttgg actgaagatt 950
 ttcttctcca aattccagtg gaaaatccag gcggaactgg actggagaag 1000
 aaagcacgga caggcagaat tgagagacgc ccggaacac gcagtggagg 1050
 tgactctgga tccagagacg gctcaccga agctctgcgt ttctgatctg 1100
 aaaactgtaa cccatagaaa agctccccag gaggtgcctc actctgagaa 1150
 gagatttaca aggaagagtg tgggtggcttc tcagagtttc caagcaggga 1200
 aacattactg ggaggtggac ggaggacaca ataaaagggtg gcgcgtggga 1250
 gtgtgccggg atgatgtgga caggaggaag gagtacgtga ctttgtctcc 1300
 cgatcatggg tactgggtcc tcagactgaa tggagaacat ttgtatttca 1350
 cattaaatcc ccgttttate agcgttttcc ccaggacccc acctacaaaa 1400
 ataggggtct tcctggacta tgagtgtggg accatctcct tcttcaacat 1450
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 tgaggcccta cattgagtat ccgtcctata atgagcaaaa tggaactccc 1550
 atagtcattc gccagtcac ccaggaatca gagaaagagg cctcttggca 1600
 aagggcctct gcaatcccag agacaagcaa cagtgagtcc tcctcacagg 1650
 caaccacgcc ctctctcccc aggggtgaaa tgtaggatga atcacatccc 1700
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 atgggagtca ggtgtcatgg ctgccctgag ctgggaggga agaaggctga 1850
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 ccacctctca ggtgaagaac cgtcaggaat tcccatctca caggctgtgg 1950

tgtagattaa gtagacaagg aatgtgaata atgcttagat cttattgatg 2000
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<210> 148
<211> 500
<212> PRT
<213> Homo sapiens

<400> 148
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20 25 30
Leu Val Gly Glu Asp Ala Ala Phe Ser Cys Phe Leu Ser Pro Lys
35 40 45
Thr Asn Ala Glu Ala Met Glu Val Arg Phe Phe Arg Gly Gln Phe
50 55 60
Ser Ser Val Val His Leu Tyr Arg Asp Gly Lys Asp Gln Pro Phe
65 70 75
Met Gln Met Pro Gln Tyr Gln Gly Arg Thr Lys Leu Val Lys Asp
80 85 90
Ser Ile Ala Glu Gly Arg Ile Ser Leu Arg Leu Glu Asn Ile Thr
95 100 105
Val Leu Asp Ala Gly Leu Tyr Gly Cys Arg Ile Ser Ser Gln Ser
110 115 120
Tyr Tyr Gln Lys Ala Ile Trp Glu Leu Gln Val Ser Ala Leu Gly
125 130 135
Ser Val Pro Leu Ile Ser Ile Thr Gly Tyr Val Asp Arg Asp Ile
140 145 150
Gln Leu Leu Cys Gln Ser Ser Gly Trp Phe Pro Arg Pro Thr Ala
155 160 165
Lys Trp Lys Gly Pro Gln Gly Gln Asp Leu Ser Thr Asp Ser Arg
170 175 180
Thr Asn Arg Asp Met His Gly Leu Phe Asp Val Glu Ile Ser Leu
185 190 195
Thr Val Gln Glu Asn Ala Gly Ser Ile Ser Cys Ser Met Arg His
200 205 210
Ala His Leu Ser Arg Glu Val Glu Ser Arg Val Gln Ile Gly Asp
215 220 225
Thr Phe Phe Glu Pro Ile Ser Trp His Leu Ala Thr Lys Val Leu

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| 230 | 235 | 240 |
|-------------------------------------|-------------------------|-----|
| Gly Ile Leu Cys Cys Gly Leu Phe Phe | Gly Ile Val Gly Leu Lys | |
| 245 | 250 | 255 |
| Ile Phe Phe Ser Lys Phe Gln Trp Lys | Ile Gln Ala Glu Leu Asp | |
| 260 | 265 | 270 |
| Trp Arg Arg Lys His Gly Gln Ala Glu | Leu Arg Asp Ala Arg Lys | |
| 275 | 280 | 285 |
| His Ala Val Glu Val Thr Leu Asp Pro | Glu Thr Ala His Pro Lys | |
| 290 | 295 | 300 |
| Leu Cys Val Ser Asp Leu Lys Thr Val | Thr His Arg Lys Ala Pro | |
| 305 | 310 | 315 |
| Gln Glu Val Pro His Ser Glu Lys Arg | Phe Thr Arg Lys Ser Val | |
| 320 | 325 | 330 |
| Val Ala Ser Gln Ser Phe Gln Ala Gly | Lys His Tyr Trp Glu Val | |
| 335 | 340 | 345 |
| Asp Gly Gly His Asn Lys Arg Trp Arg | Val Gly Val Cys Arg Asp | |
| 350 | 355 | 360 |
| Asp Val Asp Arg Arg Lys Glu Tyr Val | Thr Leu Ser Pro Asp His | |
| 365 | 370 | 375 |
| Gly Tyr Trp Val Leu Arg Leu Asn Gly | Glu His Leu Tyr Phe Thr | |
| 380 | 385 | 390 |
| Leu Asn Pro Arg Phe Ile Ser Val Phe | Pro Arg Thr Pro Pro Thr | |
| 395 | 400 | 405 |
| Lys Ile Gly Val Phe Leu Asp Tyr Glu | Cys Gly Thr Ile Ser Phe | |
| 410 | 415 | 420 |
| Phe Asn Ile Asn Asp Gln Ser Leu Ile | Tyr Thr Leu Thr Cys Arg | |
| 425 | 430 | 435 |
| Phe Glu Gly Leu Leu Arg Pro Tyr Ile | Glu Tyr Pro Ser Tyr Asn | |
| 440 | 445 | 450 |
| Glu Gln Asn Gly Thr Pro Ile Val Ile | Cys Pro Val Thr Gln Glu | |
| 455 | 460 | 465 |
| Ser Glu Lys Glu Ala Ser Trp Gln Arg | Ala Ser Ala Ile Pro Glu | |
| 470 | 475 | 480 |
| Thr Ser Asn Ser Glu Ser Ser Ser Gln | Ala Thr Thr Pro Phe Leu | |
| 485 | 490 | 495 |
| Pro Arg Gly Glu Met | | |
| 500 | | |

<210> 149
 <211> 24

caccctctt tgggcgactg ctggaccctc ttccaccacc tttcaggcgc 450
cgctcgcccc ctgcgcgacc acccctccgg cggcggaacg cacttcgacc 500
acctctcagg cgccgaccag acccgcgccg accacccttt cgacgaccac 550
tggcccgggc cgcaccaccc ctgtagcgac caccgtaccg gcgcccacga 600
ctccccggac cccgaccccc gatctcccca gcagcagcaa cagcagcgtc 650
ctccccaacc cacctgccac cgaggccccc tcttcgcctc ctccagagta 700
tgtatgtaac tgctctgtgg ttggaagcct gaatgtgaat cgctgcaacc 750
agaccacagg gcagtgtgag tgtcggccag gttatcaggg gcttactgt 800
gaaacctgca aagagggcct ttacctaaat tacacttctg ggctctgtca 850
gccatgtgac tgtagtccac atggagctct cagcataaccg tgcaacagg 900
aagcaacaga ggggtggaact gaagtttatt ttatttttagc aagggaacaa 950
aaaaggctgc tactctcaag gaccatactg gtttaaacaaggaggatga 1000
gggtcataga ttacaaaat attttatata cttttattct cttactttat 1050
atgttatatt taatgtcagg atttaaaaac atctaattta ctgatttagt 1100
tcttcaaaag cactagagtc gccaattttt ctctgggata atttctgtaa 1150
atttcatggg aaaaaattat tgaagaataa atctgcttgc tggaagggt 1200
ttcaggcatg aaacctgcta ggaggtttag aaatgttctt atgtttatta 1250
atataccatt ggagtttgag gaaatttggt gtttggttta tttttctctc 1300
taatcaaat tctacatttg tttctttgga catctaaagc ttaacctggg 1350
ggtaccctaa tttatttaac tagtggtgaag tagactggtt ttactctatt 1400
taccagtaca tttttgagac caaaagtaga ttaagcagga attatcttta 1450
aactattatg ttatttgag gtaatttaat ctagtggaat aatgtactgt 1500
tatctaagca ttgccttgt actgcactga aagtaattat tctttgacct 1550
tatgtgaggc acttggtttt ttgtggaccc caagtcaaaa aactgaagag 1600
acagtattaa ataatgaaaa aaataatgac aggttatact cagtgttaacc 1650
tgggtataac ccaagatctg ctgccactta cgagctgtgt tocttgggca 1700
agtaatttcc tttcactgag cttgtttctt ctcaagggtt ttgtgaagat 1750
taaataagtt gatatatata aaatgcctag cacatgtcac tcaataaatt 1800
ctggtttgtt ttaatttcaa aggaatatta tggactgaaa tgagagaaca 1850

tgtttaaga acttttagct ccttgacaaa gaagtgcttt atactttagc 1900
 actaaatatt ttaaatgctt tataaatgat attatactgt tatggaatat 1950
 tgtatcatat tgtagtttat taaaaatgta gaagaggctg ggcgcggtgg 2000
 ctcacgcctg taatcctagc actttgggag gccaaaggcgg gtggatcact 2050
 tgaggccagg agttctagat gagcctggcc agcacagtga aaccccgctct 2100
 ctactaaaaa tacaacaaaa ttagctgggc gtggtggcac acacctgtag 2150
 tcccagctac tcgggagggt gaggcaggag aatcggttga acccgggagg 2200
 tggaggttgc agtgagctga gatcgcgcca ctgcactcca gcctggtgag 2250
 agagggagac tctgtcttaa aaaaaaaaaa aaaaaaaaaa aaaa 2294

<210> 153

<211> 258

<212> PRT

<213> Homo sapiens

<400> 153

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Ser | Leu | Pro | Ser | Leu | Gly | Gly | Leu | Ala | Leu | Leu | Cys | Cys | 1 | 5 | 10 | 15 |
| Ala | Ala | Ala | Ala | Ala | Ala | Val | Ala | Ser | Ala | Ala | Ser | Ala | Gly | Asn | 20 | 25 | 30 | |
| Val | Thr | Gly | Gly | Gly | Gly | Ala | Ala | Gly | Gln | Val | Asp | Ala | Ser | Pro | 35 | 40 | 45 | |
| Gly | Pro | Gly | Leu | Arg | Gly | Glu | Pro | Ser | His | Pro | Phe | Pro | Arg | Ala | 50 | 55 | 60 | |
| Thr | Ala | Pro | Thr | Ala | Gln | Ala | Pro | Arg | Thr | Gly | Pro | Pro | Arg | Ala | 65 | 70 | 75 | |
| Thr | Val | His | Arg | Pro | Leu | Ala | Ala | Thr | Ser | Pro | Ala | Gln | Ser | Pro | 80 | 85 | 90 | |
| Glu | Thr | Thr | Pro | Leu | Trp | Ala | Thr | Ala | Gly | Pro | Ser | Ser | Thr | Thr | 95 | 100 | 105 | |
| Phe | Gln | Ala | Pro | Leu | Gly | Pro | Ser | Pro | Thr | Thr | Pro | Pro | Ala | Ala | 110 | 115 | 120 | |
| Glu | Arg | Thr | Ser | Thr | Thr | Ser | Gln | Ala | Pro | Thr | Arg | Pro | Ala | Pro | 125 | 130 | 135 | |
| Thr | Thr | Leu | Ser | Thr | Thr | Thr | Gly | Pro | Ala | Pro | Thr | Thr | Pro | Val | 140 | 145 | 150 | |
| Ala | Thr | Thr | Val | Pro | Ala | Pro | Thr | Thr | Pro | Arg | Thr | Pro | Thr | Pro | 155 | 160 | 165 | |
| Asp | Leu | Pro | Ser | Ser | Ser | Asn | Ser | Ser | Val | Leu | Pro | Thr | Pro | Pro | | | | |

| | | |
|---|-----|-----|
| 170 | 175 | 180 |
| Ala Thr Glu Ala Pro Ser Ser Pro Pro Pro Glu Tyr Val Cys Asn | | |
| 185 | 190 | 195 |
| Cys Ser Val Val Gly Ser Leu Asn Val Asn Arg Cys Asn Gln Thr | | |
| 200 | 205 | 210 |
| Thr Gly Gln Cys Glu Cys Arg Pro Gly Tyr Gln Gly Leu His Cys | | |
| 215 | 220 | 225 |
| Glu Thr Cys Lys Glu Gly Phe Tyr Leu Asn Tyr Thr Ser Gly Leu | | |
| 230 | 235 | 240 |
| Cys Gln Pro Cys Asp Cys Ser Pro His Gly Ala Leu Ser Ile Pro | | |
| 245 | 250 | 255 |
| Cys Asn Arg | | |

<210> 154
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 154
 aactgctctg tgggttgaag cctg 24

<210> 155
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 155
 cagtcacatg gctgacagac ccac 24

<210> 156
 <211> 38
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-38
 <223> Synthetic construct.

<400> 156
 aggttatcag gggcttcact gtgaaacctg caaagagg 38

<210> 157
 <211> 689
 <212> DNA
 <213> Homo sapiens

<400> 157
 tgcggcgcag tgtagacctg ggaggatggg cggcctgctg ctggctgctt 50
 ttctggcttt ggtctcggtg cccagggccc aggccgtgtg gttgggaaga 100
 ctggaccctg agcagcttct tgggccctgg tacgtgcttg cggtggcctc 150
 cggggaagaa ggctttgccca tggagaagga catgaagaac gtcgtggggg 200
 tgggtggtgac cctcactcca gaaaacaacc tgcggacgct gtcctctcag 250
 cacgggctgg gaggggtgtga ccagagtgtc atggacctga taaagcgaaa 300
 ctccggatgg gtgtttgaga atccctcaat aggcgtgctg gagctctggg 350
 tgctggccac caacttcaga gactatgccca tcattctcac tcagctggag 400
 ttctggggacg agcccttcaa caccgtggag ctgtacagtc tgacggagac 450
 agccagccag gagggccatgg ggctcttcac caagtggagc aggagcctgg 500
 gcttctctgtc acagtagcag gccagctgc agaaggacct cacctgtgct 550
 cacaagatcc ttctgtgagt gctgcgtccc cagtagggat ggcgcccaca 600
 gggctctgtg acctcggcca gtgtccaccc acctcgtca gcggctcccg 650
 gggcccagca ccagctcaga ataaagcgat tccacagca 689

<210> 158
 <211> 163
 <212> PRT
 <213> Homo sapiens

<400> 158
 Met Gly Gly Leu Leu Leu Ala Ala Phe Leu Ala Leu Val Ser Val
 1 5 10 15
 Pro Arg Ala Gln Ala Val Trp Leu Gly Arg Leu Asp Pro Glu Gln
 20 25 30
 Leu Leu Gly Pro Trp Tyr Val Leu Ala Val Ala Ser Arg Glu Lys
 35 40 45
 Gly Phe Ala Met Glu Lys Asp Met Lys Asn Val Val Gly Val Val
 50 55 60
 Val Thr Leu Thr Pro Glu Asn Asn Leu Arg Thr Leu Ser Ser Gln
 65 70 75
 His Gly Leu Gly Gly Cys Asp Gln Ser Val Met Asp Leu Ile Lys
 80 85 90

Arg Asn Ser Gly Trp Val Phe Glu Asn Pro Ser Ile Gly Val Leu
95 100 105

Glu Leu Trp Val Leu Ala Thr Asn Phe Arg Asp Tyr Ala Ile Ile
110 115 120

Phe Thr Gln Leu Glu Phe Gly Asp Glu Pro Phe Asn Thr Val Glu
125 130 135

Leu Tyr Ser Leu Thr Glu Thr Ala Ser Gln Glu Ala Met Gly Leu
140 145 150

Phe Thr Lys Trp Ser Arg Ser Leu Gly Phe Leu Ser Gln
155 160

<210> 159

<211> 1665

<212> DNA

<213> Homo sapiens

<400> 159

aacagacggt ccctcgcggc cctggcacct ctaaccccag acatgctgct 50
gctgctgctg ccctgctctt gggggaggga gagggcgga ggacagacaa 100
gtaaactgct gacgatgcag agttccgtga cggcgagga aggcctgtgt 150
gtccatgtgc cctgctcctt ctccacccc tcgcatggct ggatttacct 200
tggcccagta gttcatggct actggttccg ggaaggggcc aatacagacc 250
aggatgctcc agtggccaca aacaaccag ctggggcagt gtgggaggag 300
actcgggacc gattccacct ccttggggac ccacatacca agaattgcac 350
cctgagcatc agagatgcc aagaagtga tgcggggaga tactttcttc 400
gtatggagaa aggaagtata aaatggaatt ataaacatca ccggtctctt 450
gtgaatgtga cagccttgac ccacaggccc aacatcctca tcccaggcac 500
cctggagtcc ggctgcccc agaacttgac ctgctctgtg ccctgggcct 550
gtgagcaggg gacaccccct atgatctcct ggataggag ctccgtgtcc 600
cccctggacc cctccaccac ccgctcctcg gtgctcacc tcacccaca 650
gcccaggac catggcacca gcctcacctg tcaggtgacc ttccctgggg 700
ccagcgtgac cacgaacaag accgtccatc tcaacgtgtc ctaccgcct 750
cagaacttga ccatgactgt cttccaagga gacggcacag tatccacagt 800
cttgggaaat ggctcatctc tgtaactccc agagggccag tctctgcgcc 850
tggctctgtg agttgatgca gttgacagca atccccctgc caggctgagc 900
ctgagctgga gaggcctgac cctgtgcccc tcacagccct caaacccggg 950

ggtgctggag ctgccttggg tgcacctgag ggatgcagct gaattcacct 1000
 gcagagctca gaacctctc ggctctcagc aggtctacct gaacgtctcc 1050
 ctgcagagca aagccacatc aggagtgact caggggggtg tcggggggagc 1100
 tggagccaca gccctgggtct tcctgtcctt ctgcgtcatc ttcgtttag 1150
 tgaggtcctg caggaagaaa tcggcaaggc cagcagcggg cgtgggagat 1200
 acgggcatag aggatgcaaa cgctgtcagg ggttcagcct ctcaggggcc 1250
 cctgactgaa ccttgggcag aagacagtcc cccagaccag cctccccag 1300
 cttctgcccg ctctcagtg ggggaaggag agctccagta tgcattccctc 1350
 agcttccaga tggatgaagcc ttgggactcg cggggacagg aggccactga 1400
 caccgagtac tcggagatca agatccacag atgagaaact gcagagactc 1450
 accctgattg agggatcaca gccctccag gcaagggaga agtcagaggc 1500
 tgattcttgt agaattaaca gccctcaacg tgatgagcta tgataaact 1550
 atgaattatg tgcagagtga aaagcacaca ggctttagag tcaaagtatc 1600
 tcaaacctga atccacactg tgccctccct tttatttttt taactaaaag 1650
 acagacaaat tccta 1665

<210> 160

<211> 463

<212> PRT

<213> Homo sapiens

<400> 160

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Leu | Leu | Leu | Pro | Leu | Leu | Trp | Gly | Arg | Glu | Arg | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Gly | Gln | Thr | Ser | Lys | Leu | Leu | Thr | Met | Gln | Ser | Ser | Val | Thr |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gln | Glu | Gly | Leu | Cys | Val | His | Val | Pro | Cys | Ser | Phe | Ser | Tyr |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ser | His | Gly | Trp | Ile | Tyr | Pro | Gly | Pro | Val | Val | His | Gly | Tyr |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Phe | Arg | Glu | Gly | Ala | Asn | Thr | Asp | Gln | Asp | Ala | Pro | Val | Ala |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asn | Asn | Pro | Ala | Arg | Ala | Val | Trp | Glu | Glu | Thr | Arg | Asp | Arg |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | His | Leu | Leu | Gly | Asp | Pro | His | Thr | Lys | Asn | Cys | Thr | Leu | Ser |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Arg | Asp | Ala | Arg | Arg | Ser | Asp | Ala | Gly | Arg | Tyr | Phe | Phe | Arg |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

Glu Pro Trp Ala Glu Asp Ser Pro Pro Asp Gln Pro Pro Pro Ala
410 415 420

Ser Ala Arg Ser Ser Val Gly Glu Gly Glu Leu Gln Tyr Ala Ser
425 430 435

Leu Ser Phe Gln Met Val Lys Pro Trp Asp Ser Arg Gly Gln Glu
440 445 450

Ala Thr Asp Thr Glu Tyr Ser Glu Ile Lys Ile His Arg
455 460

<210> 161

<211> 739

<212> DNA

<213> Homo sapiens

<400> 161

gacgcccagt gacctgccga ggtcggcagc acagagctct ggagatgaag 50

accctgttcc tgggtgtcac gctcggcctg gccgctgcc tgtccttcac 100

cctggaggag gaggatatca cagggacctg gtacgtgaag gccatggtgg 150

tcgataagga ctttccggag gacaggaggc ccaggaaggt gtccccagtg 200

aaggtgacag ccctgggctg tgggaagttg gaagccacgt tcaccttcac 250

gagggaggat cgggtgcatcc agaagaaaat cctgatgcgg aagacggagg 300

agcctggcaa atacagcgcc tatgggggca ggaagctcat gtacctgcag 350

gagctgcca ggagggacca ctacatcttt tactgcaaag accagcacca 400

tgggggcctg ctccacatgg gaaagcttgt gggtaggaat tctgatacca 450

accgggaggc cctggaagaa tttaagaaat tgggtgcagcg caagggactc 500

tcggaggagg acattttcac gcccctgcag acgggaagct gcgttcccga 550

acactaggca gccccgggt ctgcacctcc agagcccacc ctaccaccag 600

acacagagcc cggaccacct ggacctacc tccagccatg acccttcctt 650

gctcccaccc acctgactcc aaataaagtc cttttccccc aaaaaaaaaa 700

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 739

<210> 162

<211> 170

<212> PRT

<213> Homo sapiens

<400> 162

Met Lys Thr Leu Phe Leu Gly Val Thr Leu Gly Leu Ala Ala Ala
1 5 10 15

Leu Ser Phe Thr Leu Glu Glu Glu Asp Ile Thr Gly Thr Trp Tyr

| 20 | 25 | 30 |
|---|---|-----|
| Val Lys Ala Met | Val Val Asp Lys Asp Phe Pro Glu Asp Arg Arg | |
| 35 | 40 | 45 |
| Pro Arg Lys Val Ser Pro Val Lys Val Thr Ala Leu Gly Gly Gly | | |
| 50 | 55 | 60 |
| Lys Leu Glu Ala Thr Phe Thr Phe Met Arg Glu Asp Arg Cys Ile | | |
| 65 | 70 | 75 |
| Gln Lys Lys Ile Leu Met Arg Lys Thr Glu Glu Pro Gly Lys Tyr | | |
| 80 | 85 | 90 |
| Ser Ala Tyr Gly Gly Arg Lys Leu Met Tyr Leu Gln Glu Leu Pro | | |
| 95 | 100 | 105 |
| Arg Arg Asp His Tyr Ile Phe Tyr Cys Lys Asp Gln His His Gly | | |
| 110 | 115 | 120 |
| Gly Leu Leu His Met Gly Lys Leu Val Gly Arg Asn Ser Asp Thr | | |
| 125 | 130 | 135 |
| Asn Arg Glu Ala Leu Glu Glu Phe Lys Lys Leu Val Gln Arg Lys | | |
| 140 | 145 | 150 |
| Gly Leu Ser Glu Glu Asp Ile Phe Thr Pro Leu Gln Thr Gly Ser | | |
| 155 | 160 | 165 |
| Cys Val Pro Glu His | | |
| 170 | | |

<210> 163
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-22
 <223> Synthetic construct.

<400> 163
 ggagatgaag accctgttcc tg 22

<210> 164
 <211> 26
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-26
 <223> Synthetic construct.

<400> 164
 ggagatgaag accctgttcc tgggtg 26

<210> 165
<211> 21
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-21
<223> Synthetic construct.

<400> 165
gtcctccgga aagtccttat c 21

<210> 166
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 166
gcctagtgtt cgggaacgca gcttc 25

<210> 167
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 167
cagggacctg gtacgtgaag gccatggtgg tcgataagga ctttccggag 50

<210> 168
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 168
ctgtccttca ccctggagga ggaggatatc acagggacct ggtac 45

<210> 169
<211> 1204
<212> DNA
<213> Homo sapiens

<400> 169

gttccgcaga tgcagagggt gaggtggctg cgggactgga agtcatcggg 50
 cagagggtctc acagcagcca aggaacctgg ggcccgtcc tccccctcc 100
 aggcattgag gattctgcag ttaatcctgc ttgctctggc aacagggtt 150
 gtagggggag agaccaggat catcaagggg ttcgagtga agcctcactc 200
 ccagccctgg caggcagccc tgttcgagaa gacgcggcta ctctgtgggg 250
 cgacgtcat cgccccaga ttgctcctga cagcagccca ctgcctcaag 300
 ccccgtaca tagttcacct ggggcagcac aacctccaga aggaggaggg 350
 ctgtgagcag acccgacag cactgagtc cttccccac cccggcttca 400
 acaacagcct cccaacaaa gaccaccgca atgacatcat gctggtgaag 450
 atggcatcgc cagtctccat cacctgggct gtgcgacccc tcacctctc 500
 ctacgctgt gtcactgctg gcaccagctg cctcatttcc ggctggggca 550
 gcacgtccag ccccgagttt cgctgcctc acaccttgcg atgcgccaac 600
 atcaccatca ttgagcacca gaagtgtgag aacgcctacc ccggcaacat 650
 cacagacacc atggtgtgtg ccagcgtgca ggaagggggc aaggactcct 700
 gccaggggtga ctccgggggc cctctggtct gtaaccagtc tcttcaaggc 750
 attatctcct ggggccagga tccgtgtgag atcaccgaa agcctggtgt 800
 ctacacgaaa gtctgcaaat atgtggactg gatccaggag acgatgaaga 850
 acaattagac tggaccacc caccacagcc catcaccctc catttccact 900
 tgggtgtttg ttctgtttca ctctgttaat aagaaaccct aagccaagac 950
 cctctacgaa cattcttttg gcctcctgga ctacaggaga tgctgtcact 1000
 taataatcaa cctgggggttc gaaatcagtg agacctggat tcaaattctg 1050
 ccttgaaata ttgtgactct gggaatgaca acacctggtt tgttctctgt 1100
 tgtatcccca gcccacaaaga cagctcctgg ccatatatca aggtttcaat 1150
 aaatatttgc taaatgaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1200
 aaaa 1204

<210> 170

<211> 250

<212> PRT

<213> Homo sapiens

<400> 170

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Ile | Leu | Gln | Leu | Ile | Leu | Leu | Ala | Leu | Ala | Thr | Gly | Leu |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gly | Gly | Glu | Thr | Arg | Ile | Ile | Lys | Gly | Phe | Glu | Cys | Lys | Pro | 20 | 25 | 30 |
| His | Ser | Gln | Pro | Trp | Gln | Ala | Ala | Leu | Phe | Glu | Lys | Thr | Arg | Leu | 35 | 40 | 45 |
| Leu | Cys | Gly | Ala | Thr | Leu | Ile | Ala | Pro | Arg | Trp | Leu | Leu | Thr | Ala | 50 | 55 | 60 |
| Ala | His | Cys | Leu | Lys | Pro | Arg | Tyr | Ile | Val | His | Leu | Gly | Gln | His | 65 | 70 | 75 |
| Asn | Leu | Gln | Lys | Glu | Glu | Gly | Cys | Glu | Gln | Thr | Arg | Thr | Ala | Thr | 80 | 85 | 90 |
| Glu | Ser | Phe | Pro | His | Pro | Gly | Phe | Asn | Asn | Ser | Leu | Pro | Asn | Lys | 95 | 100 | 105 |
| Asp | His | Arg | Asn | Asp | Ile | Met | Leu | Val | Lys | Met | Ala | Ser | Pro | Val | 110 | 115 | 120 |
| Ser | Ile | Thr | Trp | Ala | Val | Arg | Pro | Leu | Thr | Leu | Ser | Ser | Arg | Cys | 125 | 130 | 135 |
| Val | Thr | Ala | Gly | Thr | Ser | Cys | Leu | Ile | Ser | Gly | Trp | Gly | Ser | Thr | 140 | 145 | 150 |
| Ser | Ser | Pro | Gln | Leu | Arg | Leu | Pro | His | Thr | Leu | Arg | Cys | Ala | Asn | 155 | 160 | 165 |
| Ile | Thr | Ile | Ile | Glu | His | Gln | Lys | Cys | Glu | Asn | Ala | Tyr | Pro | Gly | 170 | 175 | 180 |
| Asn | Ile | Thr | Asp | Thr | Met | Val | Cys | Ala | Ser | Val | Gln | Glu | Gly | Gly | 185 | 190 | 195 |
| Lys | Asp | Ser | Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asn | 200 | 205 | 210 |
| Gln | Ser | Leu | Gln | Gly | Ile | Ile | Ser | Trp | Gly | Gln | Asp | Pro | Cys | Ala | 215 | 220 | 225 |
| Ile | Thr | Arg | Lys | Pro | Gly | Val | Tyr | Thr | Lys | Val | Cys | Lys | Tyr | Val | 230 | 235 | 240 |
| Asp | Trp | Ile | Gln | Glu | Thr | Met | Lys | Asn | Asn | | | | | | 245 | 250 | |

<210> 171

<211> 25

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-25

<223> Synthetic construct.

<400> 171
ggctgcggga ctggaagtca tcggg 25

<210> 172
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 172
ctccaggcca tgaggattct gcag 24

<210> 173
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 173
cctctggtct gtaaccag 18

<210> 174
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 174
tctgtgatgt tgccggggta ggcg 24

<210> 175
<211> 25
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-25
<223> Synthetic construct.

<400> 175
cgtgtagaca ccaggctttc ggggtg 25

<210> 176
<211> 18
<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-18

<223> Synthetic construct.

<400> 176

cccttgatga tcttggtc 18

<210> 177

<211> 50

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-50

<223> Synthetic construct.

<400> 177

aggccatgag gattctgcag ttaatcctgc ttgctctggc aacagggctt 50

<210> 178

<211> 43

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-43

<223> Synthetic construct.

<400> 178

gagagaccag gatcatcaag gggttcagat gcaagcctca etc 43

<210> 179

<211> 907

<212> DNA

<213> Homo sapiens

<400> 179

gagcagtgtt ctgctggagc cgatgccaaa aaccatgcat ttottattca 50

gattcattgt tttcttttat ctgtggggcc tttttactgc tcagagacaa 100

aagaaagagg agagcaccga agaagtgaag atagaagttt tgcacgtcc 150

agaaaactgc tctaagacaa gcaagaagg agacctacta aatgccatt 200

atgacggcta cctggctaaa gacggctcga aattotactg cagccggaca 250

caaatgaag gccaccccaa atggtttgtt cttggtgttg ggcaagtcac 300

aaaaggccta gacattgcta tgacagatat gtgccctgga gaaaagcgaa 350

aagtagttat acccccttca tttgcatacg gaaaggaagg ctatgcagaa 400

ggcaagattc caccggatgc tacattgatt tttagattg aactttatgc 450
 tgtgaccaaa ggaccacgga gcattgagac atttaaacia atagacatgg 500
 acaatgacag gcagctctct aaagccgaga taaacctcta cttgcaaagg 550
 gaatttgaaa aagatgagaa gccacgtgac aagtcatatc aggatgcagt 600
 tttagaagat atttttaaga agaatgacca tgatggtgat ggcttcattt 650
 ctccaagga atacaatgta taccaacacg atgaactata gcatatttgt 700
 atttctactt ttttttttta gctatttact gtactttatg tataaaacia 750
 agtcactttt ctccaagttg tatttgctat ttttccccta tgagaagata 800
 ttttgatctc cccaatacat tgattttggt ataataaatg tgaggctgtt 850
 ttgcaaactt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 900
 aaaaaaa 907

<210> 180
 <211> 222
 <212> PRT
 <213> Homo sapiens

<400> 180
 Met Pro Lys Thr Met His Phe Leu Phe Arg Phe Ile Val Phe Phe
 1 5 10 15
 Tyr Leu Trp Gly Leu Phe Thr Ala Gln Arg Gln Lys Lys Glu Glu
 20 25 30
 Ser Thr Glu Glu Val Lys Ile Glu Val Leu His Arg Pro Glu Asn
 35 40 45
 Cys Ser Lys Thr Ser Lys Lys Gly Asp Leu Leu Asn Ala His Tyr
 50 55 60
 Asp Gly Tyr Leu Ala Lys Asp Gly Ser Lys Phe Tyr Cys Ser Arg
 65 70 75
 Thr Gln Asn Glu Gly His Pro Lys Trp Phe Val Leu Gly Val Gly
 80 85 90
 Gln Val Ile Lys Gly Leu Asp Ile Ala Met Thr Asp Met Cys Pro
 95 100 105
 Gly Glu Lys Arg Lys Val Val Ile Pro Pro Ser Phe Ala Tyr Gly
 110 115 120
 Lys Glu Gly Tyr Ala Glu Gly Lys Ile Pro Pro Asp Ala Thr Leu
 125 130 135
 Ile Phe Glu Ile Glu Leu Tyr Ala Val Thr Lys Gly Pro Arg Ser
 140 145 150

Ile Glu Thr Phe Lys Gln Ile Asp Met Asp Asn Asp Arg Gln Leu
155 160 165

Ser Lys Ala Glu Ile Asn Leu Tyr Leu Gln Arg Glu Phe Glu Lys
170 175 180

Asp Glu Lys Pro Arg Asp Lys Ser Tyr Gln Asp Ala Val Leu Glu
185 190 195

Asp Ile Phe Lys Lys Asn Asp His Asp Gly Asp Gly Phe Ile Ser
200 205 210

Pro Lys Glu Tyr Asn Val Tyr Gln His Asp Glu Leu
215 220

<210> 181

<211> 22

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-22

<223> Synthetic construct.

<400> 181

gtgtttctgct ggagccgatg cc 22

<210> 182

<211> 18

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-18

<223> Synthetic construct.

<400> 182

gacatggaca atgacagg 18

<210> 183

<211> 18

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-18

<223> Synthetic construct.

<400> 183

ccttttcagga tgtaggag 18

<210> 184

<211> 18

<212> DNA

<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 184
gatgtctgcc accccaag 18

<210> 185
<211> 27
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-27
<223> Synthetic construct.

<400> 185
gcatcctgat atgacttgct acgtggc 27

<210> 186
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 186
tacaagaggg aagaggagtt gcac 24

<210> 187
<211> 52
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-52
<223> Synthetic construct.

<400> 187
gccattatg acggctacct ggctaaagac ggctcgaaat tctactgcag 50
cc 52

<210> 188
<211> 573
<212> DNA
<213> Homo sapiens

<400> 188
cagaaatgca gggaccattg cttcttccag gcctctgctt tctgctgagc 50
ctctttggag ctgtgactca gaaaaccaa acttctgtg ctaagtgcc 100

cccaaatgct tcctgtgtca ataacactca ctgcacctgc aaccatggat 150
 atactttctgg atctggggcag aaactattca cattcccctt ggagacatgt 200
 aacgccaggc atggtggctc ggcctgttaa tcccagttct ttgggaagcc 250
 aaggcaggtg gatcacctga ggtcaggagt ttgagaccag cctggccaac 300
 atagtgaaac cccgtgtcta ctaaaaatac aaaaatcagc cgggcgtggt 350
 ggtgcatgcc tgcaatccca gttactcggg aggctgaggc aggagaatcg 400
 cttgaactca ggaggcagaa gttgcagtga acccagatcc tgccattgca 450
 ctccagcatg gatgacagag caagactccg tctcaaaaag aaaagatagt 500
 ttcttgtttc atttcgcgac tgccctctca gtgtttcctg ggatcccctc 550
 ccaaataaag tacttatatt etc 573

<210> 189

<211> 74

<212> PRT

<213> Homo sapiens

<400> 189

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Gly | Pro | Leu | Leu | Leu | Pro | Gly | Leu | Cys | Phe | Leu | Leu | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Phe | Gly | Ala | Val | Thr | Gln | Lys | Thr | Lys | Thr | Ser | Cys | Ala | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Pro | Pro | Asn | Ala | Ser | Cys | Val | Asn | Asn | Thr | His | Cys | Thr | Cys |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | His | Gly | Tyr | Thr | Ser | Gly | Ser | Gly | Gln | Lys | Leu | Phe | Thr | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Leu | Glu | Thr | Cys | Asn | Ala | Arg | His | Gly | Gly | Ser | Arg | Leu |
| | | | | 65 | | | | | 70 | | | | |

<210> 190

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 190

agggaccatt gcttcttcca ggcc 24

<210> 191

<211> 24

<212> DNA

<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 191
cgttacatgt ctccaagggg aatg 24

<210> 192
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 192
cctgtgctaa gtgccccca aatgcttct gtgtcaataa cactcactgc 50

<210> 193
<211> 1091
<212> DNA
<213> Homo sapiens

<400> 193
caagcaggtc atccccttgg tgaccttcaa agagaagcag agagggcaga 50
ggtggggggc acagggaaag ggtgacctct gagattcccc ttttccccca 100
gactttggaa gtgacccacc atggggctca gcatcttttt gctcctgtgt 150
gttcttgggc tcagccaggc agccacaccg aagattttca atggcactga 200
gtgtgggcgt aactcacagc cgtggcaggt ggggctgttt gagggcacca 250
gcctgcgctg cgggggtgtc cttattgacc acaggtgggt cctcacagcg 300
gctcactgca gcggcagcag gtactgggtg cgcttggggg aacacagcct 350
cagccagctc gactggaccg agcagatccg gcacagcggc ttctctgtga 400
cccatcccgg ctacctggga gctctgacga gccacgagca cgacctccgg 450
ctgctgcggc tgcgcctgcc cgtccgcgta accagcagcg ttcaaccctt 500
gcccctgccc aatgactgtg caaccgctgg caccgagtgc cacgtctcag 550
gctggggcat caccaaccac ccacggaacc cattcccga tctgctccag 600
tgctcaacc tctccatcgt ctcccatgcc acctgccatg gtgtgtatcc 650
cgggagaatc acgagcaaca tgggtgtgtg aggcggcgtc ccggggcagg 700
atgcctgcca gggtgattct gggggccccc tgggtgtgtg gggagtcctt 750
caaggtctgg tgtcctgggg gtctgtgggg ccctgtggac aagatggcat 800

ccctggagtc tacacctata tttgcaagta tgtggactgg atccggatga 850
 tcatgaggaa caactgacct gtttctcca cctccacccc cacccttaa 900
 cttgggtacc cctctggccc tcagagcacc aatatctcct ccatcacttc 950
 ccctagctcc actcttggtg gcctgggaac ttcttggaac tttaactcct 1000
 gccagccctt ctaagaccca cgagcggggg gagagaagtg tgcaatagtc 1050
 tggaataaat ataatgaag gaggggcaaa aaaaaaaaaa a 1091

<210> 194
 <211> 248
 <212> PRT
 <213> Homo sapiens

<400> 194

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Leu | Ser | Ile | Phe | Leu | Leu | Leu | Cys | Val | Leu | Gly | Leu | Ser | 1 | 5 | 10 | 15 |
| Gln | Ala | Ala | Thr | Pro | Lys | Ile | Phe | Asn | Gly | Thr | Glu | Cys | Gly | Arg | 20 | 25 | 30 | |
| Asn | Ser | Gln | Pro | Trp | Gln | Val | Gly | Leu | Phe | Glu | Gly | Thr | Ser | Leu | 35 | 40 | 45 | |
| Arg | Cys | Gly | Gly | Val | Leu | Ile | Asp | His | Arg | Trp | Val | Leu | Thr | Ala | 50 | 55 | 60 | |
| Ala | His | Cys | Ser | Gly | Ser | Arg | Tyr | Trp | Val | Arg | Leu | Gly | Glu | His | 65 | 70 | 75 | |
| Ser | Leu | Ser | Gln | Leu | Asp | Trp | Thr | Glu | Gln | Ile | Arg | His | Ser | Gly | 80 | 85 | 90 | |
| Phe | Ser | Val | Thr | His | Pro | Gly | Tyr | Leu | Gly | Ala | Ser | Thr | Ser | His | 95 | 100 | 105 | |
| Glu | His | Asp | Leu | Arg | Leu | Leu | Arg | Leu | Arg | Leu | Pro | Val | Arg | Val | 110 | 115 | 120 | |
| Thr | Ser | Ser | Val | Gln | Pro | Leu | Pro | Leu | Pro | Asn | Asp | Cys | Ala | Thr | 125 | 130 | 135 | |
| Ala | Gly | Thr | Glu | Cys | His | Val | Ser | Gly | Trp | Gly | Ile | Thr | Asn | His | 140 | 145 | 150 | |
| Pro | Arg | Asn | Pro | Phe | Pro | Asp | Leu | Leu | Gln | Cys | Leu | Asn | Leu | Ser | 155 | 160 | 165 | |
| Ile | Val | Ser | His | Ala | Thr | Cys | His | Gly | Val | Tyr | Pro | Gly | Arg | Ile | 170 | 175 | 180 | |
| Thr | Ser | Asn | Met | Val | Cys | Ala | Gly | Gly | Val | Pro | Gly | Gln | Asp | Ala | 185 | 190 | 195 | |
| Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Gly | Gly | Val | Leu | | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 200 | 205 | 210 |
| Gln Gly Leu Val Ser Trp Gly Ser Val | Gly Pro Cys Gly Gln Asp | |
| 215 | 220 | 225 |
| Gly Ile Pro Gly Val Tyr Thr Tyr Ile | Cys Lys Tyr Val Asp Trp | |
| 230 | 235 | 240 |
| Ile Arg Met Ile Met Arg Asn Asn | | |
| 245 | | |

<210> 195
 <211> 1485
 <212> DNA
 <213> Homo sapiens

<400> 195
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 ctcgccctc gccgcgtccg cgaagcctgg agccggcggg agccccgcgc 100
 tcgcatgtc gggcgagctc agcaacaggt tccaaggagg gaaggcggtc 150
 ggcttgctca aagcccggca ggagaggagg ctggccgaga tcaaccggga 200
 gtttctgtgt gaccagaagt acagtgatga agagaacctt ccagaaaagc 250
 tcacagcctt caaagagaag tacatggagt ttgacctgaa caatgaaggc 300
 gagattgacc tgatgtcttt aaagaggatg atggagaagc ttggtgtccc 350
 caagaccac ctggagatga agaagatgat ctgagagggt acaggagggg 400
 tcagtgaac tatatcctac cgagactttg tgaacatgat gctggggaaa 450
 cggtcggctg tcctcaagtt agtcatgatg tttgaaggaa aagccaacga 500
 gagcagcccc aagccagttg gccccctcc agagagagac attgctagcc 550
 tgccctgagg acccgcctg gactccccag ccttcccacc ccatacctcc 600
 ctccgatct tgctgccctt cttgacacac tgtgatctct ctctctctca 650
 tttgtttggt cattgagggt ttgtttgtgt tttcatcaat gtctttgtaa 700
 agcaciaaatt atctgcctta aaggggtctt gggtcgggga atcctgagcc 750
 ttgggtcccc tcctctctt cttccctcct tcccgcctc ctgtgcagaa 800
 gggctgatat caaaccaaaa actagagggg gcagggccag ggcaggaggg 850
 cttccagcct gtgttccct cacttgaggg aaccagcact ctccatcctt 900
 tcagaaagtc tccaagccaa gttcaggctc actgacctgg ctctgacgag 950
 gacccaggc cactctgaga agaccttgga gtagggacaa ggctgcaggg 1000
 cctctttcgg gtttccttgg acagtgccat ggttccagtg ctctggtgtc 1050

acccaggaca cagccactcg gggccccgct gccccagctg atccccactc 1100
 attccacacc tcttctcatc ctcaagtatg tgaaggtggg aaggaaagga 1150
 gcttggcatt gggagccctt caagaaggtg ccagaaggaa ccctccagtc 1200
 ctgctctctg gccacacctg tgcaggcagc tgagaggcag cgtgcagccc 1250
 tactgtccct tactggggca gcagagggct tcggaggcag aagtgaggcc 1300
 tggggtttgg ggggaaaggt cagctcagtg ctgttccacc ttttagggag 1350
 gatactgagg ggaccaggat gggagaatga ggagtaaaat gctcacggca 1400
 aagtcagcag cactggtaag ccaagactga gaaatacaag gttgcttgctc 1450
 tgacccaat ctgcttgaaa aaaaaaaaaa aaaaa 1485

<210> 196

<211> 150

<212> PRT

<213> Homo sapiens

<400> 196

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Gly | Glu | Leu | Ser | Asn | Arg | Phe | Gln | Gly | Gly | Lys | Ala | Phe | 1 | 5 | 10 | 15 |
| Gly | Leu | Leu | Lys | Ala | Arg | Gln | Glu | Arg | Arg | Leu | Ala | Glu | Ile | Asn | 20 | 25 | 30 | |
| Arg | Glu | Phe | Leu | Cys | Asp | Gln | Lys | Tyr | Ser | Asp | Glu | Glu | Asn | Leu | 35 | 40 | 45 | |
| Pro | Glu | Lys | Leu | Thr | Ala | Phe | Lys | Glu | Lys | Tyr | Met | Glu | Phe | Asp | 50 | 55 | 60 | |
| Leu | Asn | Asn | Glu | Gly | Glu | Ile | Asp | Leu | Met | Ser | Leu | Lys | Arg | Met | 65 | 70 | 75 | |
| Met | Glu | Lys | Leu | Gly | Val | Pro | Lys | Thr | His | Leu | Glu | Met | Lys | Lys | 80 | 85 | 90 | |
| Met | Ile | Ser | Glu | Val | Thr | Gly | Gly | Val | Ser | Asp | Thr | Ile | Ser | Tyr | 95 | 100 | 105 | |
| Arg | Asp | Phe | Val | Asn | Met | Met | Leu | Gly | Lys | Arg | Ser | Ala | Val | Leu | 110 | 115 | 120 | |
| Lys | Leu | Val | Met | Met | Phe | Glu | Gly | Lys | Ala | Asn | Glu | Ser | Ser | Pro | 125 | 130 | 135 | |
| Lys | Pro | Val | Gly | Pro | Pro | Pro | Glu | Arg | Asp | Ile | Ala | Ser | Leu | Pro | 140 | 145 | 150 | |

<210> 197

<211> 4842

<212> DNA

<213> Homo sapiens

<400> 197

cgcgctcccc gcgcgcctcc tcggggtcca cgcgctcttgcccgcagagg 50
cagcctcctc caggagcggg gccctgcaca ccatggcccc cggtgggca 100
ggggtcggcg ccgccgtgcg cgcgcgcctg gcgctggcct tggcgctggc 150
gagcgtcctg agtgggcctc cagccgtcgc ctgccccacc aagtgtacct 200
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<210> 198

<211> 1523

<212> PRT

<213> Homo sapiens

<400> 198

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Pro | Gly | Trp | Ala | Gly | Val | Gly | Ala | Ala | Val | Arg | Ala | Arg | 1 | 5 | 10 | 15 |
| Leu | Ala | Leu | Ala | Leu | Ala | Leu | Ala | Ser | Val | Leu | Ser | Gly | Pro | Pro | 20 | 25 | 30 | |
| Ala | Val | Ala | Cys | Pro | Thr | Lys | Cys | Thr | Cys | Ser | Ala | Ala | Ser | Val | 35 | 40 | 45 | |
| Asp | Cys | His | Gly | Leu | Gly | Leu | Arg | Ala | Val | Pro | Arg | Gly | Ile | Pro | 50 | 55 | 60 | |
| Arg | Asn | Ala | Glu | Arg | Leu | Asp | Leu | Asp | Arg | Asn | Asn | Ile | Thr | Arg | 65 | 70 | 75 | |
| Ile | Thr | Lys | Met | Asp | Phe | Ala | Gly | Leu | Lys | Asn | Leu | Arg | Val | Leu | 80 | 85 | 90 | |
| His | Leu | Glu | Asp | Asn | Gln | Val | Ser | Val | Ile | Glu | Arg | Gly | Ala | Phe | 95 | 100 | 105 | |
| Gln | Asp | Leu | Lys | Gln | Leu | Glu | Arg | Leu | Arg | Leu | Asn | Lys | Asn | Lys | 110 | 115 | 120 | |
| Leu | Gln | Val | Leu | Pro | Glu | Leu | Leu | Phe | Gln | Ser | Thr | Pro | Lys | Leu | 125 | 130 | 135 | |
| Thr | Arg | Leu | Asp | Leu | Ser | Glu | Asn | Gln | Ile | Gln | Gly | Ile | Pro | Arg | 140 | 145 | 150 | |
| Lys | Ala | Phe | Arg | Gly | Ile | Thr | Asp | Val | Lys | Asn | Leu | Gln | Leu | Asp | 155 | 160 | 165 | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Asn Asn His Ile | Ser Cys Ile Glu Asp | Gly Ala Phe Arg Ala Leu | 170 | 175 | 180 |
| Arg Asp Leu Glu | Ile Leu Thr Leu Asn | Asn Asn Asn Ile Ser Arg | 185 | 190 | 195 |
| Ile Leu Val Thr | Ser Phe Asn His Met | Pro Lys Ile Arg Thr Leu | 200 | 205 | 210 |
| Arg Leu His Ser | Asn His Leu Tyr Cys | Asp Cys His Leu Ala Trp | 215 | 220 | 225 |
| Leu Ser Asp Trp | Leu Arg Gln Arg Arg | Thr Val Gly Gln Phe Thr | 230 | 235 | 240 |
| Leu Cys Met Ala | Pro Val His Leu Arg | Gly Phe Asn Val Ala Asp | 245 | 250 | 255 |
| Val Gln Lys Lys | Glu Tyr Val Cys Pro | Ala Pro His Ser Glu Pro | 260 | 265 | 270 |
| Pro Ser Cys Asn | Ala Asn Ser Ile Ser | Cys Pro Ser Pro Cys Thr | 275 | 280 | 285 |
| Cys Ser Asn Asn | Ile Val Asp Cys Arg | Gly Lys Gly Leu Met Glu | 290 | 295 | 300 |
| Ile Pro Ala Asn | Leu Pro Glu Gly Ile | Val Glu Ile Arg Leu Glu | 305 | 310 | 315 |
| Gln Asn Ser Ile | Lys Ala Ile Pro Ala | Gly Ala Phe Thr Gln Tyr | 320 | 325 | 330 |
| Lys Lys Leu Lys | Arg Ile Asp Ile Ser | Lys Asn Gln Ile Ser Asp | 335 | 340 | 345 |
| Ile Ala Pro Asp | Ala Phe Gln Gly Leu | Lys Ser Leu Thr Ser Leu | 350 | 355 | 360 |
| Val Leu Tyr Gly | Asn Lys Ile Thr Glu | Ile Ala Lys Gly Leu Phe | 365 | 370 | 375 |
| Asp Gly Leu Val | Ser Leu Gln Leu Leu | Leu Leu Asn Ala Asn Lys | 380 | 385 | 390 |
| Ile Asn Cys Leu | Arg Val Asn Thr Phe | Gln Asp Leu Gln Asn Leu | 395 | 400 | 405 |
| Asn Leu Leu Ser | Leu Tyr Asp Asn Lys | Leu Gln Thr Ile Ser Lys | 410 | 415 | 420 |
| Gly Leu Phe Ala | Pro Leu Gln Ser Ile | Gln Thr Leu His Leu Ala | 425 | 430 | 435 |
| Gln Asn Pro Phe | Val Cys Asp Cys His | Leu Lys Trp Leu Ala Asp | 440 | 445 | 450 |
| Tyr Leu Gln Asp | Asn Pro Ile Glu Thr | Ser Gly Ala Arg Cys Ser | | | |

| 455 | 460 | 465 |
|-------------------------------------|-------------------------|-----|
| Ser Pro Arg Arg Leu Ala Asn Lys Arg | Ile Ser Gln Ile Lys Ser | |
| 470 | 475 | 480 |
| Lys Lys Phe Arg Cys Ser Gly Ser Glu | Asp Tyr Arg Ser Arg Phe | |
| 485 | 490 | 495 |
| Ser Ser Glu Cys Phe Met Asp Leu Val | Cys Pro Glu Lys Cys Arg | |
| 500 | 505 | 510 |
| Cys Glu Gly Thr Ile Val Asp Cys Ser | Asn Gln Lys Leu Val Arg | |
| 515 | 520 | 525 |
| Ile Pro Ser His Leu Pro Glu Tyr Val | Thr Asp Leu Arg Leu Asn | |
| 530 | 535 | 540 |
| Asp Asn Glu Val Ser Val Leu Glu Ala | Thr Gly Ile Phe Lys Lys | |
| 545 | 550 | 555 |
| Leu Pro Asn Leu Arg Lys Ile Asn Leu | Ser Asn Asn Lys Ile Lys | |
| 560 | 565 | 570 |
| Glu Val Arg Glu Gly Ala Phe Asp Gly | Ala Ala Ser Val Gln Glu | |
| 575 | 580 | 585 |
| Leu Met Leu Thr Gly Asn Gln Leu Glu | Thr Val His Gly Arg Val | |
| 590 | 595 | 600 |
| Phe Arg Gly Leu Ser Gly Leu Lys Thr | Leu Met Leu Arg Ser Asn | |
| 605 | 610 | 615 |
| Leu Ile Ser Cys Val Ser Asn Asp Thr | Phe Ala Gly Leu Ser Ser | |
| 620 | 625 | 630 |
| Val Arg Leu Leu Ser Leu Tyr Asp Asn | Arg Ile Thr Thr Ile Thr | |
| 635 | 640 | 645 |
| Pro Gly Ala Phe Thr Thr Leu Val Ser | Leu Ser Thr Ile Asn Leu | |
| 650 | 655 | 660 |
| Leu Ser Asn Pro Phe Asn Cys Asn Cys | His Leu Ala Trp Leu Gly | |
| 665 | 670 | 675 |
| Lys Trp Leu Arg Lys Arg Arg Ile Val | Ser Gly Asn Pro Arg Cys | |
| 680 | 685 | 690 |
| Gln Lys Pro Phe Phe Leu Lys Glu Ile | Pro Ile Gln Asp Val Ala | |
| 695 | 700 | 705 |
| Ile Gln Asp Phe Thr Cys Asp Gly Asn | Glu Glu Ser Ser Cys Gln | |
| 710 | 715 | 720 |
| Leu Ser Pro Arg Cys Pro Glu Gln Cys | Thr Cys Met Glu Thr Val | |
| 725 | 730 | 735 |
| Val Arg Cys Ser Asn Lys Gly Leu Arg | Ala Leu Pro Arg Gly Met | |
| 740 | 745 | 750 |

| | | | |
|-----------------|---------------------|---------------------|------|
| Pro Lys Asp Val | Thr Glu Leu Tyr Leu | Glu Gly Asn His Leu | Thr |
| 755 | | 760 | 765 |
| Ala Val Pro Arg | Glu Leu Ser Ala Leu | Arg His Leu Thr Leu | Ile |
| 770 | | 775 | 780 |
| Asp Leu Ser Asn | Asn Ser Ile Ser Met | Leu Thr Asn Tyr Thr | Phe |
| 785 | | 790 | 795 |
| Ser Asn Met Ser | His Leu Ser Thr Leu | Ile Leu Ser Tyr Asn | Arg |
| 800 | | 805 | 810 |
| Leu Arg Cys Ile | Pro Val His Ala Phe | Asn Gly Leu Arg Ser | Leu |
| 815 | | 820 | 825 |
| Arg Val Leu Thr | Leu His Gly Asn Asp | Ile Ser Ser Val Pro | Glu |
| 830 | | 835 | 840 |
| Gly Ser Phe Asn | Asp Leu Thr Ser Leu | Ser His Leu Ala Leu | Gly |
| 845 | | 850 | 855 |
| Thr Asn Pro Leu | His Cys Asp Cys Ser | Leu Arg Trp Leu Ser | Glu |
| 860 | | 865 | 870 |
| Trp Val Lys Ala | Gly Tyr Lys Glu Pro | Gly Ile Ala Arg Cys | Ser |
| 875 | | 880 | 885 |
| Ser Pro Glu Pro | Met Ala Asp Arg Leu | Leu Leu Thr Thr Pro | Thr |
| 890 | | 895 | 900 |
| His Arg Phe Gln | Cys Lys Gly Pro Val | Asp Ile Asn Ile Val | Ala |
| 905 | | 910 | 915 |
| Lys Cys Asn Ala | Cys Leu Ser Ser Pro | Cys Lys Asn Asn Gly | Thr |
| 920 | | 925 | 930 |
| Cys Thr Gln Asp | Pro Val Glu Leu Tyr | Arg Cys Ala Cys Pro | Tyr |
| 935 | | 940 | 945 |
| Ser Tyr Lys Gly | Lys Asp Cys Thr Val | Pro Ile Asn Thr Cys | Ile |
| 950 | | 955 | 960 |
| Gln Asn Pro Cys | Gln His Gly Gly Thr | Cys His Leu Ser Asp | Ser |
| 965 | | 970 | 975 |
| His Lys Asp Gly | Phe Ser Cys Ser Cys | Pro Leu Gly Phe Glu | Gly |
| 980 | | 985 | 990 |
| Gln Arg Cys Glu | Ile Asn Pro Asp Asp | Cys Glu Asp Asn Asp | Cys |
| 995 | | 1000 | 1005 |
| Glu Asn Asn Ala | Thr Cys Val Asp Gly | Ile Asn Asn Tyr Val | Cys |
| 1010 | | 1015 | 1020 |
| Ile Cys Pro Pro | Asn Tyr Thr Gly Glu | Leu Cys Asp Glu Val | Ile |
| 1025 | | 1030 | 1035 |
| Asp His Cys Val | Pro Glu Leu Asn Leu | Cys Gln His Glu Ala | Lys |

| | | |
|---|------|------|
| 1040 | 1045 | 1050 |
| Cys Ile Pro Leu Asp Lys Gly Phe Ser Cys Glu Cys Val Pro Gly | | |
| 1055 | 1060 | 1065 |
| Tyr Ser Gly Lys Leu Cys Glu Thr Asp Asn Asp Asp Cys Val Ala | | |
| 1070 | 1075 | 1080 |
| His Lys Cys Arg His Gly Ala Gln Cys Val Asp Thr Ile Asn Gly | | |
| 1085 | 1090 | 1095 |
| Tyr Thr Cys Thr Cys Pro Gln Gly Phe Ser Gly Pro Phe Cys Glu | | |
| 1100 | 1105 | 1110 |
| His Pro Pro Pro Met Val Leu Leu Gln Thr Ser Pro Cys Asp Gln | | |
| 1115 | 1120 | 1125 |
| Tyr Glu Cys Gln Asn Gly Ala Gln Cys Ile Val Val Gln Gln Glu | | |
| 1130 | 1135 | 1140 |
| Pro Thr Cys Arg Cys Pro Pro Gly Phe Ala Gly Pro Arg Cys Glu | | |
| 1145 | 1150 | 1155 |
| Lys Leu Ile Thr Val Asn Phe Val Gly Lys Asp Ser Tyr Val Glu | | |
| 1160 | 1165 | 1170 |
| Leu Ala Ser Ala Lys Val Arg Pro Gln Ala Asn Ile Ser Leu Gln | | |
| 1175 | 1180 | 1185 |
| Val Ala Thr Asp Lys Asp Asn Gly Ile Leu Leu Tyr Lys Gly Asp | | |
| 1190 | 1195 | 1200 |
| Asn Asp Pro Leu Ala Leu Glu Leu Tyr Gln Gly His Val Arg Leu | | |
| 1205 | 1210 | 1215 |
| Val Tyr Asp Ser Leu Ser Ser Pro Pro Thr Thr Val Tyr Ser Val | | |
| 1220 | 1225 | 1230 |
| Glu Thr Val Asn Asp Gly Gln Phe His Ser Val Glu Leu Val Thr | | |
| 1235 | 1240 | 1245 |
| Leu Asn Gln Thr Leu Asn Leu Val Val Asp Lys Gly Thr Pro Lys | | |
| 1250 | 1255 | 1260 |
| Ser Leu Gly Lys Leu Gln Lys Gln Pro Ala Val Gly Ile Asn Ser | | |
| 1265 | 1270 | 1275 |
| Pro Leu Tyr Leu Gly Gly Ile Pro Thr Ser Thr Gly Leu Ser Ala | | |
| 1280 | 1285 | 1290 |
| Leu Arg Gln Gly Thr Asp Arg Pro Leu Gly Gly Phe His Gly Cys | | |
| 1295 | 1300 | 1305 |
| Ile His Glu Val Arg Ile Asn Asn Glu Leu Gln Asp Phe Lys Ala | | |
| 1310 | 1315 | 1320 |
| Leu Pro Pro Gln Ser Leu Gly Val Ser Pro Gly Cys Lys Ser Cys | | |
| 1325 | 1330 | 1335 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Thr | Val | Cys | Lys | His | Gly | Leu | Cys | Arg | Ser | Val | Glu | Lys | Asp | Ser | 1340 | 1345 | 1350 |
| Val | Val | Cys | Glu | Cys | Arg | Pro | Gly | Trp | Thr | Gly | Pro | Leu | Cys | Asp | 1355 | 1360 | 1365 |
| Gln | Glu | Ala | Arg | Asp | Pro | Cys | Leu | Gly | His | Arg | Cys | His | His | Gly | 1370 | 1375 | 1380 |
| Lys | Cys | Val | Ala | Thr | Gly | Thr | Ser | Tyr | Met | Cys | Lys | Cys | Ala | Glu | 1385 | 1390 | 1395 |
| Gly | Tyr | Gly | Gly | Asp | Leu | Cys | Asp | Asn | Lys | Asn | Asp | Ser | Ala | Asn | 1400 | 1405 | 1410 |
| Ala | Cys | Ser | Ala | Phe | Lys | Cys | His | His | Gly | Gln | Cys | His | Ile | Ser | 1415 | 1420 | 1425 |
| Asp | Gln | Gly | Glu | Pro | Tyr | Cys | Leu | Cys | Gln | Pro | Gly | Phe | Ser | Gly | 1430 | 1435 | 1440 |
| Glu | His | Cys | Gln | Gln | Glu | Asn | Pro | Cys | Leu | Gly | Gln | Val | Val | Arg | 1445 | 1450 | 1455 |
| Glu | Val | Ile | Arg | Arg | Gln | Lys | Gly | Tyr | Ala | Ser | Cys | Ala | Thr | Ala | 1460 | 1465 | 1470 |
| Ser | Lys | Val | Pro | Ile | Met | Glu | Cys | Arg | Gly | Gly | Cys | Gly | Pro | Gln | 1475 | 1480 | 1485 |
| Cys | Cys | Gln | Pro | Thr | Arg | Ser | Lys | Arg | Arg | Lys | Tyr | Val | Phe | Gln | 1490 | 1495 | 1500 |
| Cys | Thr | Asp | Gly | Ser | Ser | Phe | Val | Glu | Glu | Val | Glu | Arg | His | Leu | 1505 | 1510 | 1515 |
| Glu | Cys | Gly | Cys | Leu | Ala | Cys | Ser | | | | | | | | 1520 | | |

<210> 199
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 199
 atggagattc ctgccaaactt gccg 24

<210> 200
 <211> 24
 <212> DNA
 <213> Artificial

<220>

<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 200
ttgttggcat tgaggaggag cagc 24

<210> 201
<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 201
gagggcatcg tcgaaatacg cctagaacag aactccatca aagccatccc 50

<210> 202
<211> 753
<212> DNA
<213> Homo sapiens

<400> 202
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gtttotttcg cagactcaac tgagaagtca gcctctgggg caggcaccag 100
gaatctgcct tticagttct gtctccggca ggctttgagg atgaaggctg 150
cgggcattct gaccctcatt ggctgcctgg tcacaggcgc cgagtccaaa 200
atctacactc gttgcaaact ggcaaaaata ttctcgaggg ctggcctgga 250
caattactgg ggcttcagcc ttggaaactg gatctgcatg gcatattatg 300
agagcggcta caacaccaca gccccgacgg tcctggatga cggcagcatc 350
gactatggca tcttcagat caacagcttc gcgtggtgca gacgcggaaa 400
gctgaaggag aacaaccact gccatgtcgc ctgctcagcc ttgatcactg 450
atgacctcac agatgcaatt atctgtgcca ggaaaattgt taaagagaca 500
caaggaatga actattggca aggctggaag aaacattgtg agggcagaga 550
cctgtccgag tggaaaaaag gctgtgaggt ttcttaaact ggaactggac 600
ccaggatgct ttgcagcaac gcctaggat ttgcagtga tgtccaaatg 650
cctgtgtcat cttgtcccgt ttctcccaa tattccttct caaacttgga 700
gagggaaaat taagctatac ttttaagaaa ataaatattt ocattttaa 750
gtc 753

<210> 203
 <211> 148
 <212> PRT
 <213> Homo sapiens

<400> 203
 Met Lys Ala Ala Gly Ile Leu Thr Leu Ile Gly Cys Leu Val Thr
 1 5 10 15
 Gly Ala Glu Ser Lys Ile Tyr Thr Arg Cys Lys Leu Ala Lys Ile
 20 25 30
 Phe Ser Arg Ala Gly Leu Asp Asn Tyr Trp Gly Phe Ser Leu Gly
 35 40 45
 Asn Trp Ile Cys Met Ala Tyr Tyr Glu Ser Gly Tyr Asn Thr Thr
 50 55 60
 Ala Pro Thr Val Leu Asp Asp Gly Ser Ile Asp Tyr Gly Ile Phe
 65 70 75
 Gln Ile Asn Ser Phe Ala Trp Cys Arg Arg Gly Lys Leu Lys Glu
 80 85 90
 Asn Asn His Cys His Val Ala Cys Ser Ala Leu Ile Thr Asp Asp
 95 100 105
 Leu Thr Asp Ala Ile Ile Cys Ala Arg Lys Ile Val Lys Glu Thr
 110 115 120
 Gln Gly Met Asn Tyr Trp Gln Gly Trp Lys Lys His Cys Glu Gly
 125 130 135
 Arg Asp Leu Ser Glu Trp Lys Lys Gly Cys Glu Val Ser
 140 145

<210> 204
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 204
 gcaggctttg aggatgaagg ctgc 24

<210> 205
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 205
ctcattggct gcctgtcac aggc 24

<210> 206
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 206
ccagtcggac aggtctctcc cctc 24

<210> 207
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 207
tcagtgacca aggctgagca ggcg 24

<210> 208
<211> 47
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 208
ctacactcgt tgcaaactgg caaaaatatt ctcgagggct ggcctgg 47

<210> 209
<211> 1648
<212> DNA
<213> Homo sapiens

<400> 209
caggccattt gcatcccact gtccttgtgt tcggagccag gccacaccgt 50
cctcagcagt gtcattgtgt aaaaacgcca agctgaatat atcatgcccc 100
tattaaaact tgtacatggc tccccattgg tttttggaga aaagttcaag 150
ctttttacct tgggtgtctgc ctgtatccca gtgttcaggc tggctagacg 200
gcggaagaag atcctatatt actgtcactt cccagatctg cttctcacca 250

<212> PRT

<213> Homo sapiens

<400> 210

Met Pro Leu Leu Lys Leu Val His Gly Ser Pro Leu Val Phe Gly
1 5 10 15
Glu Lys Phe Lys Leu Phe Thr Leu Val Ser Ala Cys Ile Pro Val
20 25 30
Phe Arg Leu Ala Arg Arg Arg Lys Lys Ile Leu Phe Tyr Cys His
35 40 45
Phe Pro Asp Leu Leu Leu Thr Lys Arg Asp Ser Phe Leu Lys Arg
50 55 60
Leu Tyr Arg Ala Pro Ile Asp Trp Ile Glu Glu Tyr Thr Thr Gly
65 70 75
Met Ala Asp Cys Ile Leu Val Asn Ser Gln Phe Thr Ala Ala Val
80 85 90
Phe Lys Glu Thr Phe Lys Ser Leu Ser His Ile Asp Pro Asp Val
95 100 105
Leu Tyr Pro Ser Leu Asn Val Thr Ser Phe Asp Ser Val Val Pro
110 115 120
Glu Lys Leu Asp Asp Leu Val Pro Lys Gly Lys Lys Phe Leu Leu
125 130 135
Leu Ser Ile Asn Arg Tyr Glu Arg Lys Lys Asn Leu Thr Leu Ala
140 145 150
Leu Glu Ala Leu Val Gln Leu Arg Gly Arg Leu Thr Ser Gln Asp
155 160 165
Trp Glu Arg Val His Leu Ile Val Ala Gly Gly Tyr Asp Glu Arg
170 175 180
Val Leu Glu Asn Val Glu His Tyr Gln Glu Leu Lys Lys Met Val
185 190 195
Gln Gln Ser Asp Leu Gly Gln Tyr Val Thr Phe Leu Arg Ser Phe
200 205 210
Ser Asp Lys Gln Lys Ile Ser Leu Leu His Ser Cys Thr Cys Val
215 220 225
Leu Tyr Thr Pro Ser Asn Glu His Phe Gly Ile Val Pro Leu Glu
230 235 240
Ala Met Tyr Met Gln Cys Pro Val Ile Ala Val Asn Ser Gly Gly
245 250 255
Pro Leu Glu Ser Ile Asp His Ser Val Thr Gly Phe Leu Cys Glu
260 265 270

Pro Asp Pro Val His Phe Ser Glu Ala Ile Glu Lys Phe Ile Arg
275 280 285

Glu Pro Ser Leu Lys Ala Thr Met Gly Leu Ala Gly Arg Ala Arg
290 295 300

Val Lys Glu Lys Phe Ser Pro Glu Ala Phe Thr Glu Gln Leu Tyr
305 310 315

Arg Tyr Val Thr Lys Leu Leu Val
320

<210> 211

<211> 1554

<212> DNA

<213> Homo sapiens

<400> 211

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tttgcatgag ttcttggtta atttgcata gagatatggg cctgtggtct 250
ccttctgggt tggcaggcgc ctcttggtta gtttgggcac tgttgatgta 300
ctgaagcagc atatcaatcc caataagaca tcggaccctt ttgaaaccat 350
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accacatgag gaaaaaattg tatgaaaatg gtgtgactga ttctctgaag 450
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gctctcctac ccagagaccc agcacgtgcc cctcagccag catatgcttg 550
gttttgctat gaagtctgtt acacagatgg taatgggtag tacatttgaa 600
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 cattgttaaa ttgattgagg aaaacaacca tttaaaaaaa atctatgttg 1500
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<210> 212
 <211> 462
 <212> PRT
 <213> Homo sapiens

<400> 212
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 Val Gly Ala Val Leu Tyr Leu Tyr Pro Ala Ser Arg Gln Ala Ala
 20 25 30
 Gly Ile Pro Gly Ile Thr Pro Thr Glu Glu Lys Asp Gly Asn Leu
 35 40 45
 Pro Asp Ile Val Asn Ser Gly Ser Leu His Glu Phe Leu Val Asn
 50 55 60
 Leu His Glu Arg Tyr Gly Pro Val Val Ser Phe Trp Phe Gly Arg
 65 70 75
 Arg Leu Val Val Ser Leu Gly Thr Val Asp Val Leu Lys Gln His
 80 85 90
 Ile Asn Pro Asn Lys Thr Ser Asp Pro Phe Glu Thr Met Leu Lys
 95 100 105
 Ser Leu Leu Arg Tyr Gln Ser Gly Gly Gly Ser Val Ser Glu Asn
 110 115 120
 His Met Arg Lys Lys Leu Tyr Glu Asn Gly Val Thr Asp Ser Leu
 125 130 135
 Lys Ser Asn Phe Ala Leu Leu Leu Lys Leu Ser Glu Glu Leu Leu

140 145 150
 Asp Lys Trp Leu Ser Tyr Pro Glu Thr Gln His Val Pro Leu Ser
 155 160 165
 Gln His Met Leu Gly Phe Ala Met Lys Ser Val Thr Gln Met Val
 170 175 180
 Met Gly Ser Thr Phe Glu Asp Asp Gln Glu Val Ile Arg Phe Gln
 185 190 195
 Lys Asn His Gly Thr Val Trp Ser Glu Ile Gly Lys Gly Phe Leu
 200 205 210
 Asp Gly Ser Leu Asp Lys Asn Met Thr Arg Lys Lys Gln Tyr Glu
 215 220 225
 Asp Ala Leu Met Gln Leu Glu Ser Val Leu Arg Asn Ile Ile Lys
 230 235 240
 Glu Arg Lys Gly Arg Asn Phe Ser Gln His Ile Phe Ile Asp Ser
 245 250 255
 Leu Val Gln Gly Asn Leu Asn Asp Gln Gln Ile Leu Glu Asp Ser
 260 265 270
 Met Ile Phe Ser Leu Ala Ser Cys Ile Ile Thr Ala Lys Leu Cys
 275 280 285
 Thr Trp Ala Ile Cys Phe Leu Thr Thr Ser Glu Glu Val Gln Lys
 290 295 300
 Lys Leu Tyr Glu Glu Ile Asn Gln Val Phe Gly Asn Gly Pro Val
 305 310 315
 Thr Pro Glu Lys Ile Glu Gln Leu Arg Tyr Cys Gln His Val Leu
 320 325 330
 Cys Glu Thr Val Arg Thr Ala Lys Leu Thr Pro Val Ser Ala Gln
 335 340 345
 Leu Gln Asp Ile Glu Gly Lys Ile Asp Arg Phe Ile Ile Pro Arg
 350 355 360
 Glu Thr Leu Val Leu Tyr Ala Leu Gly Val Val Leu Gln Asp Pro
 365 370 375
 Asn Thr Trp Pro Ser Pro His Lys Phe Asp Pro Asp Arg Phe Asp
 380 385 390
 Asp Glu Leu Val Met Lys Thr Phe Ser Ser Leu Gly Phe Ser Gly
 395 400 405
 Thr Gln Glu Cys Pro Glu Leu Arg Phe Ala Tyr Met Val Thr Thr
 410 415 420
 Val Leu Leu Ser Val Leu Val Lys Arg Leu His Leu Leu Ser Val
 425 430 435

Glu Gly Gln Val Ile Glu Thr Lys Tyr Glu Leu Val Thr Ser Ser
 440 445 450

Arg Glu Glu Ala Trp Ile Thr Val Ser Lys Arg Tyr
 455 460

<210> 213
 <211> 759
 <212> DNA
 <213> Homo sapiens

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 tcagggcttg tgccctctcg cttcctgacg ctcctggcgc atctggtggt 150
 cgtcatcacc ttattctggt cccgggacag caacatacag gcctgcctgc 200
 ctctcacgtt ccccccgag gagtatgaca agcaggacat tcagctggtg 250
 gccgcgctct ctgtcaccct gggcctcttt gcagtggagc tggccggttt 300
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 gggctcactg tagtgcaccc gtggccctgt ccttcttcat attcgagcgt 400
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 aacccttctg attaccttca tgacgggaac ctaaggacga agcctacagg 550
 ggcaagggcc gcttcgtatt cctggaagaa ggaaggcata ggcttcggtt 600
 ttcccctcgg aaactgcttc tgctggagga tatgtgttgg aataattacg 650
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 aaaaaaaaa 759

<210> 214
 <211> 140
 <212> PRT
 <213> Homo sapiens

<400> 214
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 Leu Ala His Leu Val Val Val Ile Thr Leu Phe Trp Ser Arg Asp
 20 25 30
 Ser Asn Ile Gln Ala Cys Leu Pro Leu Thr Phe Thr Pro Glu Glu
 35 40 45

Tyr Asp Lys Gln Asp Ile Gln Leu Val Ala Ala Leu Ser Val Thr
 50 55 60
 Leu Gly Leu Phe Ala Val Glu Leu Ala Gly Phe Leu Ser Gly Val
 65 70 75
 Ser Met Phe Asn Ser Thr Gln Ser Leu Ile Ser Ile Gly Ala His
 80 85 90
 Cys Ser Ala Ser Val Ala Leu Ser Phe Phe Ile Phe Glu Arg Trp
 95 100 105
 Glu Cys Thr Thr Tyr Trp Tyr Ile Phe Val Phe Cys Ser Ala Leu
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 Pro Ala Val Thr Glu Met Ala Leu Phe Val Thr Val Phe Gly Leu
 125 130 135
 Lys Lys Lys Pro Phe
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<210> 215
 <211> 697
 <212> DNA
 <213> Homo sapiens

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 gaccggcct gctgcagccc catagtgcc cggaacgagt ggaaggccct 150
 ggcacagag tgcgcccagc acctgagcct gcccttacgc tatgtggtgg 200
 tatgcacac ggcgggcagc agctgcaaca ccccgacctc gtgccagcag 250
 caggcccgga atgtgcagca ctaccacatg aagacactgg gctggtgcga 300
 cgtgggctac aacttctga ttggagaaga cgggctcgta tacgagggcc 350
 gtggtggaa cttcacgggt gccactcag gtcacttatg gaaccccatg 400
 tccattggca tcagcttcat gggcaactac atggatcggg tgcccacacc 450
 ccaggccatc cgggcagccc aggtctact ggcctgcggt gtggctcagg 500
 gagccctgag gtccaactat gtgctcaaag gacaccgga tgtgcagcgt 550
 acactctctc caggcaacca gctctaccac ctcatccaga attggccaca 600
 ctaccgtcc cctgaggcc ctgctgatcc gcacccatt cctccctcc 650
 catggccaaa aacccactg tctccttctc caataaagat gtagctc 697

<210> 216
 <211> 196
 <212> PRT

<213> Homo sapiens

<400> 216

Met Ser Arg Arg Ser Met Leu Leu Ala Trp Ala Leu Pro Ser Leu
1 5 10 15
Leu Arg Leu Gly Ala Ala Gln Glu Thr Glu Asp Pro Ala Cys Cys
20 25 30
Ser Pro Ile Val Pro Arg Asn Glu Trp Lys Ala Leu Ala Ser Glu
35 40 45
Cys Ala Gln His Leu Ser Leu Pro Leu Arg Tyr Val Val Val Ser
50 55 60
His Thr Ala Gly Ser Ser Cys Asn Thr Pro Ala Ser Cys Gln Gln
65 70 75
Gln Ala Arg Asn Val Gln His Tyr His Met Lys Thr Leu Gly Trp
80 85 90
Cys Asp Val Gly Tyr Asn Phe Leu Ile Gly Glu Asp Gly Leu Val
95 100 105
Tyr Glu Gly Arg Gly Trp Asn Phe Thr Gly Ala His Ser Gly His
110 115 120
Leu Trp Asn Pro Met Ser Ile Gly Ile Ser Phe Met Gly Asn Tyr
125 130 135
Met Asp Arg Val Pro Thr Pro Gln Ala Ile Arg Ala Ala Gln Gly
140 145 150
Leu Leu Ala Cys Gly Val Ala Gln Gly Ala Leu Arg Ser Asn Tyr
155 160 165
Val Leu Lys Gly His Arg Asp Val Gln Arg Thr Leu Ser Pro Gly
170 175 180
Asn Gln Leu Tyr His Leu Ile Gln Asn Trp Pro His Tyr Arg Ser
185 190 195
Pro

<210> 217

<211> 1871

<212> DNA

<213> Homo sapiens

<400> 217

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tctatctggt catctgtggc caggatgatg gtcctcccggt ctcagaggac 150
cctgagcgtg atgaccacga gggccagccc cgccccggg tgcctcgaa 200

tcacctgtca gaccggggtt ctcccggatc tggatggcgc cggcctctca 1700
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 tgttctgtgt gtctgtctgt ggggtggggg aggggagga agtcttgtga 1800
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<210> 218
 <211> 252
 <212> PRT
 <213> Homo sapiens

<400> 218

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gln | Leu | Thr | Arg | Cys | Cys | Phe | Val | Phe | Leu | Val | Gln | Gly | Ser | 1 | 5 | 10 | 15 |
| Leu | Tyr | Leu | Val | Ile | Cys | Gly | Gln | Asp | Asp | Gly | Pro | Pro | Gly | Ser | 20 | 25 | 30 | |
| Glu | Asp | Pro | Glu | Arg | Asp | Asp | His | Glu | Gly | Gln | Pro | Arg | Pro | Arg | 35 | 40 | 45 | |
| Val | Pro | Arg | Lys | Arg | Gly | His | Ile | Ser | Pro | Lys | Ser | Arg | Pro | Met | 50 | 55 | 60 | |
| Ala | Asn | Ser | Thr | Leu | Leu | Gly | Leu | Leu | Ala | Pro | Pro | Gly | Glu | Ala | 65 | 70 | 75 | |
| Trp | Gly | Ile | Leu | Gly | Gln | Pro | Pro | Asn | Arg | Pro | Asn | His | Ser | Pro | 80 | 85 | 90 | |
| Pro | Pro | Ser | Ala | Lys | Val | Lys | Lys | Ile | Phe | Gly | Trp | Gly | Asp | Phe | 95 | 100 | 105 | |
| Tyr | Ser | Asn | Ile | Lys | Thr | Val | Ala | Leu | Asn | Leu | Leu | Val | Thr | Gly | 110 | 115 | 120 | |
| Lys | Ile | Val | Asp | His | Gly | Asn | Gly | Thr | Phe | Ser | Val | His | Phe | Gln | 125 | 130 | 135 | |
| His | Asn | Ala | Thr | Gly | Gln | Gly | Asn | Ile | Ser | Ile | Ser | Leu | Val | Pro | 140 | 145 | 150 | |
| Pro | Ser | Lys | Ala | Val | Glu | Phe | His | Gln | Glu | Gln | Gln | Ile | Phe | Ile | 155 | 160 | 165 | |
| Glu | Ala | Lys | Ala | Ser | Lys | Ile | Phe | Asn | Cys | Arg | Met | Glu | Trp | Glu | 170 | 175 | 180 | |
| Lys | Val | Glu | Arg | Gly | Arg | Arg | Thr | Ser | Leu | Cys | Thr | His | Asp | Pro | 185 | 190 | 195 | |
| Ala | Lys | Ile | Cys | Ser | Arg | Asp | His | Ala | Gln | Ser | Ser | Ala | Thr | Trp | 200 | 205 | 210 | |

Ser Cys Ser Gln Pro Phe Lys Val Val Cys Val Tyr Ile Ala Phe
 215 220 225

Tyr Ser Thr Asp Tyr Arg Leu Val Gln Lys Val Cys Pro Asp Tyr
 230 235 240

Asn Tyr His Ser Asp Thr Pro Tyr Tyr Pro Ser Gly
 245 250

<210> 219

<211> 2065

<212> DNA

<213> Homo sapiens

<400> 219

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 tttcacattg gagtctgtct tttagcacc aagaaaagga atttacagtt 700
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 ttgatgttaa atggaaaacc agtaatatct gcctttgogg gggacaaaga 800
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 cagtattcca cgttttctgg ctttctggtg ttccccctat aggattcaat 950
 ttctccatga tgttcatcca ggtgagggat gaccactcc tgagttattg 1000
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 tgcocttaact ctttaaatg tatatattta tctgttttagc taatattaaa 1950
 ttcaaataat ccataatctaa atttagtgca atatcttgct ttttgatatag 2000
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 tatatgttaa aaaaa 2065

<210> 220
 <211> 201
 <212> PRT
 <213> Homo sapiens

<400> 220
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 Leu Val Leu Thr Leu Pro Gly Leu Pro Val Trp Ala Gln Asn Asp
 20 25 30
 Thr Glu Pro Ile Val Leu Glu Gly Lys Cys Leu Val Val Cys Asp
 35 40 45
 Ser Asn Pro Ala Thr Asp Ser Lys Gly Ser Ser Ser Ser Pro Leu
 50 55 60

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Ile | Ser | Val | Arg | Ala | Ala | Asn | Ser | Lys | Val | Ala | Phe | Ser | Ala | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Arg | Ser | Thr | Asn | His | Glu | Pro | Ser | Glu | Met | Ser | Asn | Lys | Thr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Arg | Ile | Ile | Tyr | Phe | Asp | Gln | Ile | Leu | Val | Asn | Val | Gly | Asn | Phe | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Phe | Thr | Leu | Glu | Ser | Val | Phe | Val | Ala | Pro | Arg | Lys | Gly | Ile | Tyr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Phe | Ser | Phe | His | Val | Ile | Lys | Val | Tyr | Gln | Ser | Gln | Thr | Ile | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gln | Val | Asn | Leu | Met | Leu | Asn | Gly | Lys | Pro | Val | Ile | Ser | Ala | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Gly | Asp | Lys | Asp | Val | Thr | Arg | Glu | Ala | Ala | Thr | Asn | Gly | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Leu | Tyr | Leu | Asp | Lys | Glu | Asp | Lys | Val | Tyr | Leu | Lys | Leu | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Gly | Asn | Leu | Val | Gly | Gly | Trp | Gln | Tyr | Ser | Thr | Phe | Ser | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Phe | Leu | Val | Phe | Pro | Leu | | | | | | | | | | |
| | | | | 200 | | | | | | | | | | | |

<210> 221

<211> 20

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-20

<223> Synthetic construct.

<400> 221

acggctcacc atgggctccg 20

<210> 222

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 222

aggaagagga gcccttggag tccg 24

<210> 223

<211> 40

<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-40
<223> Synthetic construct.

<400> 223
cgtgctggag ggcaagtgtc tgggtggtgtg cgactcgaac 40

<210> 224
<211> 902
<212> DNA
<213> Homo sapiens

<400> 224
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tatcatcttc ctcatcgccg gagctttctt ctggttggtg tctctactga 150
tttcgtccct tgtttggttc atggcaagag tcattattga caacaaagat 200
ggaccaacac agaaatatct gctgatcttt ggagcgtttg tctctgtcta 250
tatccaagaa atgttccgat ttgcatatta taaactctta aaaaaagcca 300
gtgaagggtt gaagagtata aaccaggtg agacagcacc ctctatgcga 350
ctgctggcct atgtttcttg cttgggcttt ggaatcatga gtggagtatt 400
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tcagcattta taatcctggt gctcatgggc acctgggcat tcttagctgc 700
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actttcttct ttacaaccag cgctccagat aacctcaggg aaccagcact 800
tcccaaaccg cagactacat ctttagagga agcacaactg tgcctttttc 850
tgaaaatccc tttttctggt ggaattgaga aagaaataaa actatgcaga 900
ta 902

<210> 225
<211> 257
<212> PRT

<213> Homo sapiens

<400> 225

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Thr | Ala | Ala | Val | Phe | Phe | Gly | Cys | Ala | Phe | Ile | Ala | Phe | Gly | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Ala | Leu | Ala | Leu | Tyr | Val | Phe | Thr | Ile | Ala | Ile | Glu | Pro | Leu | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Arg | Ile | Ile | Phe | Leu | Ile | Ala | Gly | Ala | Phe | Phe | Trp | Leu | Val | Ser | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Leu | Leu | Ile | Ser | Ser | Leu | Val | Trp | Phe | Met | Ala | Arg | Val | Ile | Ile | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Asp | Asn | Lys | Asp | Gly | Pro | Thr | Gln | Lys | Tyr | Leu | Leu | Ile | Phe | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ala | Phe | Val | Ser | Val | Tyr | Ile | Gln | Glu | Met | Phe | Arg | Phe | Ala | Tyr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Tyr | Lys | Leu | Leu | Lys | Lys | Ala | Ser | Glu | Gly | Leu | Lys | Ser | Ile | Asn | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Pro | Gly | Glu | Thr | Ala | Pro | Ser | Met | Arg | Leu | Leu | Ala | Tyr | Val | Ser | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Leu | Gly | Phe | Gly | Ile | Met | Ser | Gly | Val | Phe | Ser | Phe | Val | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Leu | Ser | Asp | Ser | Leu | Gly | Pro | Gly | Thr | Val | Gly | Ile | His | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asp | Ser | Pro | Gln | Phe | Phe | Leu | Tyr | Ser | Ala | Phe | Met | Thr | Leu | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ile | Ile | Leu | Leu | His | Val | Phe | Trp | Gly | Ile | Val | Phe | Phe | Asp | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Cys | Glu | Lys | Lys | Lys | Trp | Gly | Ile | Leu | Leu | Ile | Val | Leu | Leu | Thr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| His | Leu | Leu | Val | Ser | Ala | Gln | Thr | Phe | Ile | Ser | Ser | Tyr | Tyr | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ile | Asn | Leu | Ala | Ser | Ala | Phe | Ile | Ile | Leu | Val | Leu | Met | Gly | Thr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Trp | Ala | Phe | Leu | Ala | Ala | Gly | Gly | Ser | Cys | Arg | Ser | Leu | Lys | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Cys | Leu | Leu | Cys | Gln | Asp | Lys | Asn | Phe | Leu | Leu | Tyr | Asn | Gln | Arg | |
| | | | | 245 | | | | | 250 | | | | | 255 | |

Ser Arg

<210> 226

<211> 3939
<212> DNA
<213> Homo sapiens

<400> 226

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gagccatctg ggggttctgg ggccaagaa cgtctcgcag aaagacgccg 150
agtttgagcg cacctacgtg gacgaggtca acagcgagct ggtcaacatc 200
tacaccttca accatactgt gaccgcgaac aggacagagg gcgtgcgtgt 250
gtctgtgaac gtcctgaaca agcagaaggg ggcgcggttg ctgtttgtgg 300
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agcagcacag cccagctact tcaagtatga gttccctgaa ggcgtggact 600
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tccattcagg atgtgctgtg tcctgtctat gacctggaca acaacgtagc 700
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accgaagacc aagcctgcgg gggctccctg cttttctacc ctttcgcaga 850
agatgaaccg gtgatcaag ggcaccgcca gaaaaccctg tcagtgtgtg 900
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<210> 227

<211> 832

<212> PRT

<213> Homo sapiens

<400> 227

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Ala | Leu | Gly | Leu | Pro | Phe | Leu | Val | Leu | Leu | Val | Ala | Ser |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Val | Glu | Ser | His | Leu | Gly | Val | Leu | Gly | Pro | Lys | Asn | Val | Ser | Gln |
| | | | 20 | | | | | 25 | | | | | 30 | |

Lys Asp Ala Glu Phe Glu Arg Thr Tyr Val Asp Glu Val Asn Ser
 35 40 45
 Glu Leu Val Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn
 50 55 60
 Arg Thr Glu Gly Val Arg Val Ser Val Asn Val Leu Asn Lys Gln
 65 70 75
 Lys Gly Ala Pro Leu Leu Phe Val Val Arg Gln Lys Glu Ala Val
 80 85 90
 Val Ser Phe Gln Val Pro Leu Ile Leu Arg Gly Met Phe Gln Arg
 95 100 105
 Lys Tyr Leu Tyr Gln Lys Val Glu Arg Thr Leu Cys Gln Pro Pro
 110 115 120
 Thr Lys Asn Glu Ser Glu Ile Gln Phe Phe Tyr Val Asp Val Ser
 125 130 135
 Thr Leu Ser Pro Val Asn Thr Thr Tyr Gln Leu Arg Val Ser Arg
 140 145 150
 Met Asp Asp Phe Val Leu Arg Thr Gly Glu Gln Phe Ser Phe Asn
 155 160 165
 Thr Thr Ala Ala Gln Pro Gln Tyr Phe Lys Tyr Glu Phe Pro Glu
 170 175 180
 Gly Val Asp Ser Val Ile Val Lys Val Thr Ser Asn Lys Ala Phe
 185 190 195
 Pro Cys Ser Val Ile Ser Ile Gln Asp Val Leu Cys Pro Val Tyr
 200 205 210
 Asp Leu Asp Asn Asn Val Ala Phe Ile Gly Met Tyr Gln Thr Met
 215 220 225
 Thr Lys Lys Ala Ala Ile Thr Val Gln Arg Lys Asp Phe Pro Ser
 230 235 240
 Asn Ser Phe Tyr Val Val Val Val Val Lys Thr Glu Asp Gln Ala
 245 250 255
 Cys Gly Gly Ser Leu Pro Phe Tyr Pro Phe Ala Glu Asp Glu Pro
 260 265 270
 Val Asp Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser
 275 280 285
 Gln Ala Val Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys
 290 295 300
 Leu Gly Ile Phe Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala
 305 310 315
 Cys Trp Glu Asn Trp Arg Gln Lys Lys Lys Thr Leu Leu Val Ala

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|-------------------------------------|-------------------------|-----|-----|-----|
| Ile Asp Arg Ala Cys Pro Glu Ser Gly | His Pro Arg Val Leu Ala | 320 | 325 | 330 |
| 335 | 340 | | | 345 |
| Asp Ser Phe Pro Gly Ser Ser Pro Tyr | Glu Gly Tyr Asn Tyr Gly | 350 | 355 | 360 |
| Ser Phe Glu Asn Val Ser Gly Ser Thr | Asp Gly Leu Val Asp Ser | 365 | 370 | 375 |
| Ala Gly Thr Gly Asp Leu Ser Tyr Gly | Tyr Gln Gly Arg Ser Phe | 380 | 385 | 390 |
| Glu Pro Val Gly Thr Arg Pro Arg Val | Asp Ser Met Ser Ser Val | 395 | 400 | 405 |
| Glu Glu Asp Asp Tyr Asp Thr Leu Thr | Asp Ile Asp Ser Asp Lys | 410 | 415 | 420 |
| Asn Val Ile Arg Thr Lys Gln Tyr Leu | Tyr Val Ala Asp Leu Ala | 425 | 430 | 435 |
| Arg Lys Asp Lys Arg Val Leu Arg Lys | Lys Tyr Gln Ile Tyr Phe | 440 | 445 | 450 |
| Trp Asn Ile Ala Thr Ile Ala Val Phe | Tyr Ala Leu Pro Val Val | 455 | 460 | 465 |
| Gln Leu Val Ile Thr Tyr Gln Thr Val | Val Asn Val Thr Gly Asn | 470 | 475 | 480 |
| Gln Asp Ile Cys Tyr Tyr Asn Phe Leu | Cys Ala His Pro Leu Gly | 485 | 490 | 495 |
| Asn Leu Ser Ala Phe Asn Asn Ile Leu | Ser Asn Leu Gly Tyr Ile | 500 | 505 | 510 |
| Leu Leu Gly Leu Leu Phe Leu Leu Ile | Ile Leu Gln Arg Glu Ile | 515 | 520 | 525 |
| Asn His Asn Arg Ala Leu Leu Arg Asn | Asp Leu Cys Ala Leu Glu | 530 | 535 | 540 |
| Cys Gly Ile Pro Lys His Phe Gly Leu | Phe Tyr Ala Met Gly Thr | 545 | 550 | 555 |
| Ala Leu Met Met Glu Gly Leu Leu Ser | Ala Cys Tyr His Val Cys | 560 | 565 | 570 |
| Pro Asn Tyr Thr Asn Phe Gln Phe Asp | Thr Ser Phe Met Tyr Met | 575 | 580 | 585 |
| Ile Ala Gly Leu Cys Met Leu Lys Leu | Tyr Gln Lys Arg His Pro | 590 | 595 | 600 |
| Asp Ile Asn Ala Ser Ala Tyr Ser Ala | Tyr Ala Cys Leu Ala Ile | 605 | 610 | 615 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Ile | Phe | Phe | Ser | Val | Leu | Gly | Val | Val | Phe | Gly | Lys | Gly | Asn | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Thr | Ala | Phe | Trp | Ile | Val | Phe | Ser | Ile | Ile | His | Ile | Ile | Ala | Thr | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Leu | Leu | Leu | Ser | Thr | Gln | Leu | Tyr | Tyr | Met | Gly | Arg | Trp | Lys | Leu | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Asp | Ser | Gly | Ile | Phe | Arg | Arg | Ile | Leu | His | Val | Leu | Tyr | Thr | Asp | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Cys | Ile | Arg | Gln | Cys | Ser | Gly | Pro | Leu | Tyr | Val | Asp | Arg | Met | Val | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Leu | Leu | Val | Met | Gly | Asn | Val | Ile | Asn | Trp | Ser | Leu | Ala | Ala | Tyr | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Gly | Leu | Ile | Met | Arg | Pro | Asn | Asp | Phe | Ala | Ser | Tyr | Leu | Leu | Ala | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Ile | Gly | Ile | Cys | Asn | Leu | Leu | Leu | Tyr | Phe | Ala | Phe | Tyr | Ile | Ile | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Met | Lys | Leu | Arg | Ser | Gly | Glu | Arg | Ile | Lys | Leu | Ile | Pro | Leu | Leu | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Cys | Ile | Val | Cys | Thr | Ser | Val | Val | Trp | Gly | Phe | Ala | Leu | Phe | Phe | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Phe | Phe | Gln | Gly | Leu | Ser | Thr | Trp | Gln | Lys | Thr | Pro | Ala | Glu | Ser | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Arg | Glu | His | Asn | Arg | Asp | Cys | Ile | Leu | Leu | Asp | Phe | Phe | Asp | Asp | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| His | Asp | Ile | Trp | His | Phe | Leu | Ser | Ser | Ile | Ala | Met | Phe | Gly | Ser | |
| | | | | 800 | | | | | 805 | | | | | 810 | |
| Phe | Leu | Val | Leu | Leu | Thr | Leu | Asp | Asp | Asp | Leu | Asp | Thr | Val | Gln | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Arg | Asp | Lys | Ile | Tyr | Val | Phe | | | | | | | | | |
| | | | | 830 | | | | | | | | | | | |

<210> 228
 <211> 2848
 <212> DNA
 <213> Homo sapiens

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<210> 229

<211> 807

<212> PRT

<213> Homo sapiens

<400> 229

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| Met | Val | Pro | Ala | Trp | Leu | Trp | Leu | Leu | Cys | Val | Ser | Val | Pro | Gln |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |

Ala Leu Pro Lys Ala Gln Pro Ala Glu Leu Ser Val Glu Val Pro

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| | 20 | 25 | 30 |
|---|-----|-----|-----|
| Glu Asn Tyr Gly Gly Asn Phe Pro Leu Tyr Leu Thr Lys Leu Pro | 35 | 40 | 45 |
| Leu Pro Arg Glu Gly Ala Glu Gly Gln Ile Val Leu Ser Gly Asp | 50 | 55 | 60 |
| Ser Gly Lys Ala Thr Glu Gly Pro Phe Ala Met Asp Pro Asp Ser | 65 | 70 | 75 |
| Gly Phe Leu Leu Val Thr Arg Ala Leu Asp Arg Glu Glu Gln Ala | 80 | 85 | 90 |
| Glu Tyr Gln Leu Gln Val Thr Leu Glu Met Gln Asp Gly His Val | 95 | 100 | 105 |
| Leu Trp Gly Pro Gln Pro Val Leu Val His Val Lys Asp Glu Asn | 110 | 115 | 120 |
| Asp Gln Val Pro His Phe Ser Gln Ala Ile Tyr Arg Ala Arg Leu | 125 | 130 | 135 |
| Ser Arg Gly Thr Arg Pro Gly Ile Pro Phe Leu Phe Leu Glu Ala | 140 | 145 | 150 |
| Ser Asp Arg Asp Glu Pro Gly Thr Ala Asn Ser Asp Leu Arg Phe | 155 | 160 | 165 |
| His Ile Leu Ser Gln Ala Pro Ala Gln Pro Ser Pro Asp Met Phe | 170 | 175 | 180 |
| Gln Leu Glu Pro Arg Leu Gly Ala Leu Ala Leu Ser Pro Lys Gly | 185 | 190 | 195 |
| Ser Thr Ser Leu Asp His Ala Leu Glu Arg Thr Tyr Gln Leu Leu | 200 | 205 | 210 |
| Val Gln Val Lys Asp Met Gly Asp Gln Ala Ser Gly His Gln Ala | 215 | 220 | 225 |
| Thr Ala Thr Val Glu Val Ser Ile Ile Glu Ser Thr Trp Val Ser | 230 | 235 | 240 |
| Leu Glu Pro Ile His Leu Ala Glu Asn Leu Lys Val Leu Tyr Pro | 245 | 250 | 255 |
| His His Met Ala Gln Val His Trp Ser Gly Gly Asp Val His Tyr | 260 | 265 | 270 |
| His Leu Glu Ser His Pro Pro Gly Pro Phe Glu Val Asn Ala Glu | 275 | 280 | 285 |
| Gly Asn Leu Tyr Val Thr Arg Glu Leu Asp Arg Glu Ala Gln Ala | 290 | 295 | 300 |
| Glu Tyr Leu Leu Gln Val Arg Ala Gln Asn Ser His Gly Glu Asp | 305 | 310 | 315 |

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|-------------------------------------|-------------------------|
| Tyr Ala Ala Pro Leu Glu Leu His Val | Leu Val Met Asp Glu Asn |
| 320 | 325 330 |
| Asp Asn Val Pro Ile Cys Pro Pro Arg | Asp Pro Thr Val Ser Ile |
| 335 | 340 345 |
| Pro Glu Leu Ser Pro Pro Gly Thr Glu | Val Thr Arg Leu Ser Ala |
| 350 | 355 360 |
| Glu Asp Ala Asp Ala Pro Gly Ser Pro | Asn Ser His Val Val Tyr |
| 365 | 370 375 |
| Gln Leu Leu Ser Pro Glu Pro Glu Asp | Gly Val Glu Gly Arg Ala |
| 380 | 385 390 |
| Phe Gln Val Asp Pro Thr Ser Gly Ser | Val Thr Leu Gly Val Leu |
| 395 | 400 405 |
| Pro Leu Arg Ala Gly Gln Asn Ile Leu | Leu Leu Val Leu Ala Met |
| 410 | 415 420 |
| Asp Leu Ala Gly Ala Glu Gly Gly Phe | Ser Ser Thr Cys Glu Val |
| 425 | 430 435 |
| Glu Val Ala Val Thr Asp Ile Asn Asp | His Ala Pro Glu Phe Ile |
| 440 | 445 450 |
| Thr Ser Gln Ile Gly Pro Ile Ser Leu | Pro Glu Asp Val Glu Pro |
| 455 | 460 465 |
| Gly Thr Leu Val Ala Met Leu Thr Ala | Ile Asp Ala Asp Leu Glu |
| 470 | 475 480 |
| Pro Ala Phe Arg Leu Met Asp Phe Ala | Ile Glu Arg Gly Asp Thr |
| 485 | 490 495 |
| Glu Gly Thr Phe Gly Leu Asp Trp Glu | Pro Asp Ser Gly His Val |
| 500 | 505 510 |
| Arg Leu Arg Leu Cys Lys Asn Leu Ser | Tyr Glu Ala Ala Pro Ser |
| 515 | 520 525 |
| His Glu Val Val Val Val Val Gln Ser | Val Ala Lys Leu Val Gly |
| 530 | 535 540 |
| Pro Gly Pro Gly Pro Gly Ala Thr Ala | Thr Val Thr Val Leu Val |
| 545 | 550 555 |
| Glu Arg Val Met Pro Pro Pro Lys Leu | Asp Gln Glu Ser Tyr Glu |
| 560 | 565 570 |
| Ala Ser Val Pro Ile Ser Ala Pro Ala | Gly Ser Phe Leu Leu Thr |
| 575 | 580 585 |
| Ile Gln Pro Ser Asp Pro Ile Ser Arg | Thr Leu Arg Phe Ser Leu |
| 590 | 595 600 |
| Val Asn Asp Ser Glu Gly Trp Leu Cys | Ile Glu Lys Phe Ser Gly |

| | | |
|---|---------------------|-----|
| 605 | 610 | 615 |
| Glu Val His Thr Ala Gln Ser Leu Gln Gly | Ala Gln Pro Gly Asp | |
| 620 | 625 | 630 |
| Thr Tyr Thr Val Leu Val Glu Ala Gln Asp | Thr Ala Leu Thr Leu | |
| 635 | 640 | 645 |
| Ala Pro Val Pro Ser Gln Tyr Leu Cys Thr | Pro Arg Gln Asp His | |
| 650 | 655 | 660 |
| Gly Leu Ile Val Ser Gly Pro Ser Lys Asp | Pro Asp Leu Ala Ser | |
| 665 | 670 | 675 |
| Gly His Gly Pro Tyr Ser Phe Thr Leu Gly | Pro Asn Pro Thr Val | |
| 680 | 685 | 690 |
| Gln Arg Asp Trp Arg Leu Gln Thr Leu Asn | Gly Ser His Ala Tyr | |
| 695 | 700 | 705 |
| Leu Thr Leu Ala Leu His Trp Val Glu Pro | Arg Glu His Ile Ile | |
| 710 | 715 | 720 |
| Pro Val Val Val Ser His Asn Ala Gln Met | Trp Gln Leu Leu Val | |
| 725 | 730 | 735 |
| Arg Val Ile Val Cys Arg Cys Asn Val Glu | Gly Gln Cys Met Arg | |
| 740 | 745 | 750 |
| Lys Val Gly Arg Met Lys Gly Met Pro Thr | Lys Leu Ser Ala Val | |
| 755 | 760 | 765 |
| Gly Ile Leu Val Gly Thr Leu Val Ala Ile | Gly Ile Phe Leu Ile | |
| 770 | 775 | 780 |
| Leu Ile Phe Thr His Trp Thr Met Ser Arg | Lys Lys Asp Pro Asp | |
| 785 | 790 | 795 |
| Gln Pro Ala Asp Ser Val Pro Leu Lys Ala | Thr Val | |
| 800 | 805 | |

<210> 230
 <211> 50
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-50
 <223> Synthetic construct.

<400> 230
 cgccttaccg cgcagcccgga agattcacta tgggtgaaaat cgccttcaat 50

<210> 231
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
<221> Artificial Sequence
<222> full
<223> Synthetic oligonucleotide probe

<400> 231
cctgagctgt aaccccactc cagg 24

<210> 232
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 232
agagtctgtc ccagctatct tgt 23

<210> 233
<211> 2786
<212> DNA
<213> Homo sapiens

<400> 233
ccggggacat gaggtggata ctgttcattg gggcccttat tgggtccagc 50
atctgtggcc aagaaaaatt ttttggggac caagttttga ggattaatgt 100
cagaaatgga gacgagatca gcaaattgag tcaactagtg aattcaaaca 150
acttgaagct caatttctgg aaatctccct cctccttcaa tcggcctgtg 200
gatgtcctgg tcccatctgt cagtctgcag gcatttaaact ccttcctgag 250
atcccagggc ttagagtacg cagtgcacat tgaggacctg caggcccttt 300
tagacaatga agatgatgaa atgcaacaca atgaagggca agaacggagc 350
agtaataact tcaactacgg ggcttaccat tccctggaag ctatttacca 400
cgagatggac aacattgccg cagactttcc tgacctggcg aggagggtga 450
agattggaca ttcgtttgaa aaccggccga tgtatgtact gaagttcagc 500
actgggaaag gcgtgaggcg gccggccgtt tggctgaatg caggcatcca 550
ttcccagagag tggatctccc aggccactgc aatctggacg gcaaggaaga 600
ttgtatctga ttaccagagg gatccagcta tcacctccat cttggagaaa 650
atggatattt tcttgttgcc tgtggccaat cctgatggat atgtgtatac 700
tcaaactcaa aaccgattat ggaggaagac gcggtcccg aatcctggaa 750
gctcctgcat tgggtgctgac ccaaatagaa actggaacgc tagttttgca 800
ggaaagggag ccagcgacaa cccttgctcc gaagtgtacc atggacccca 850

cgccaattcg gaagtggagg tgaaatcagt ggtagatttc atccaaaaac 900
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<210> 234

<211> 421

<212> PRT

<213> Homo sapiens

<400> 234

Met Arg Trp Ile Leu Phe Ile Gly Ala Leu Ile Gly Ser Ser Ile
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Cys Gly Gln Glu Lys Phe Phe Gly Asp Gln Val Leu Arg Ile Asn
20 25 30

Val Arg Asn Gly Asp Glu Ile Ser Lys Leu Ser Gln Leu Val Asn
35 40 45

Ser Asn Asn Leu Lys Leu Asn Phe Trp Lys Ser Pro Ser Ser Phe
50 55 60

Asn Arg Pro Val Asp Val Leu Val Pro Ser Val Ser Leu Gln Ala
65 70 75

Phe Lys Ser Phe Leu Arg Ser Gln Gly Leu Glu Tyr Ala Val Thr
80 85 90

Ile Glu Asp Leu Gln Ala Leu Leu Asp Asn Glu Asp Asp Glu Met
95 100 105

Gln His Asn Glu Gly Gln Glu Arg Ser Ser Asn Asn Phe Asn Tyr
110 115 120

Gly Ala Tyr His Ser Leu Glu Ala Ile Tyr His Glu Met Asp Asn
125 130 135

Ile Ala Ala Asp Phe Pro Asp Leu Ala Arg Arg Val Lys Ile Gly
140 145 150

His Ser Phe Glu Asn Arg Pro Met Tyr Val Leu Lys Phe Ser Thr
155 160 165

| | | | |
|-----------------|---------------------|---------------------|-----|
| Gly Lys Gly Val | Arg Arg Pro Ala Val | Trp Leu Asn Ala Gly | Ile |
| 170 | 175 | 180 | |
| His Ser Arg Glu | Trp Ile Ser Gln Ala | Thr Ala Ile Trp Thr | Ala |
| 185 | 190 | 195 | |
| Arg Lys Ile Val | Ser Asp Tyr Gln Arg | Asp Pro Ala Ile Thr | Ser |
| 200 | 205 | 210 | |
| Ile Leu Glu Lys | Met Asp Ile Phe Leu | Leu Pro Val Ala Asn | Pro |
| 215 | 220 | 225 | |
| Asp Gly Tyr Val | Tyr Thr Gln Thr Gln | Asn Arg Leu Trp Arg | Lys |
| 230 | 235 | 240 | |
| Thr Arg Ser Arg | Asn Pro Gly Ser Ser | Cys Ile Gly Ala Asp | Pro |
| 245 | 250 | 255 | |
| Asn Arg Asn Trp | Asn Ala Ser Phe Ala | Gly Lys Gly Ala Ser | Asp |
| 260 | 265 | 270 | |
| Asn Pro Cys Ser | Glu Val Tyr His Gly | Pro His Ala Asn Ser | Glu |
| 275 | 280 | 285 | |
| Val Glu Val Lys | Ser Val Val Asp Phe | Ile Gln Lys His Gly | Asn |
| 290 | 295 | 300 | |
| Phe Lys Gly Phe | Ile Asp Leu His Ser | Tyr Ser Gln Leu Leu | Met |
| 305 | 310 | 315 | |
| Tyr Pro Tyr Gly | Tyr Ser Val Lys Lys | Ala Pro Asp Ala Glu | Glu |
| 320 | 325 | 330 | |
| Leu Asp Lys Val | Ala Arg Leu Ala Ala | Lys Ala Leu Ala Ser | Val |
| 335 | 340 | 345 | |
| Ser Gly Thr Glu | Tyr Gln Val Gly Pro | Thr Cys Thr Thr Val | Tyr |
| 350 | 355 | 360 | |
| Pro Ala Ser Gly | Ser Ser Ile Asp Trp | Ala Tyr Asp Asn Gly | Ile |
| 365 | 370 | 375 | |
| Lys Phe Ala Phe | Thr Phe Glu Leu Arg | Asp Thr Gly Thr Tyr | Gly |
| 380 | 385 | 390 | |
| Phe Leu Leu Pro | Ala Asn Gln Ile Ile | Pro Thr Ala Glu Glu | Thr |
| 395 | 400 | 405 | |
| Trp Leu Gly Leu | Lys Thr Ile Met Glu | His Val Arg Asp Asn | Leu |
| 410 | 415 | 420 | |

Tyr

<210> 235
 <211> 1743
 <212> DNA
 <213> Homo sapiens

<400> 235

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tggtccaaaa tggcatctta cctttatgga gtactctttg ctgttggcct 100
ctgtgctcca atctactgtg tgtccccggc caatgcccc agtgcatacc 150
cccgcccttc ctccacaaag agcaccctg cctcacaggt gtattccctc 200
aacaccgact ttgccttccg cctataccgc aggtctggtt tggagacccc 250
gagtcagaac atctttcttct cccctgtgag tgtctccact tccctggcca 300
tgctctccct tggggccac tcagtcacca agaccagat tctccagggc 350
ctgggcttca acctcacaca cacaccagag tctgccatcc accagggtt 400
ccagcacctg gttcactcac tgactgttcc cagcaaagac ctgacctga 450
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gccccttcac cttgaatata caagaaagaa cttcccatc ctggtgggag 750
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gggagatgcc gtggccttct ttgtcctccc tagcaagggc aagatgaggc 900
aactggaaca ggcttgtca gccagaacac tgataaagtg gagccactca 950
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gtttctaaag caaccacaa ggctgtgctg gatgtcagtg aagagggcac 1150
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aatcaccaaa ccatcaacag ggacccccagt cacaagccaa caccattaa 1500
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 attcaataaa actaaaatat gaattcaaaa aaaaaaaaaa aaaaaaaaaa 1700
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 1743

<210> 236
 <211> 417
 <212> PRT
 <213> Homo sapiens

<400> 236

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Tyr | Leu | Tyr | Gly | Val | Leu | Phe | Ala | Val | Gly | Leu | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Pro | Ile | Tyr | Cys | Val | Ser | Pro | Ala | Asn | Ala | Pro | Ser | Ala | Tyr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Arg | Pro | Ser | Ser | Thr | Lys | Ser | Thr | Pro | Ala | Ser | Gln | Val | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ser | Leu | Asn | Thr | Asp | Phe | Ala | Phe | Arg | Leu | Tyr | Arg | Arg | Leu | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Glu | Thr | Pro | Ser | Gln | Asn | Ile | Phe | Phe | Ser | Pro | Val | Ser | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Thr | Ser | Leu | Ala | Met | Leu | Ser | Leu | Gly | Ala | His | Ser | Val | Thr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Thr | Gln | Ile | Leu | Gln | Gly | Leu | Gly | Phe | Asn | Leu | Thr | His | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Pro | Glu | Ser | Ala | Ile | His | Gln | Gly | Phe | Gln | His | Leu | Val | His | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Thr | Val | Pro | Ser | Lys | Asp | Leu | Thr | Leu | Lys | Met | Gly | Ser | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Phe | Val | Lys | Lys | Glu | Leu | Gln | Leu | Gln | Ala | Asn | Phe | Leu | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Asn | Val | Lys | Arg | Leu | Tyr | Glu | Ala | Glu | Val | Phe | Ser | Thr | Asp | Phe |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Asn | Pro | Ser | Ile | Ala | Gln | Ala | Arg | Ile | Asn | Ser | His | Val | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Lys | Lys | Thr | Gln | Gly | Lys | Val | Val | Asp | Ile | Ile | Gln | Gly | Leu | Asp |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Leu | Thr | Ala | Met | Val | Leu | Val | Asn | His | Ile | Phe | Phe | Lys | Ala |

<211> 47
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 238
ctttgctgtt ggcctctgtg ctcccaacca tgcaaggaca gggcagg 47

<210> 239
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 239
tgactcgggg tctccaaaac cagc 24

<210> 240
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 240
ggtataggcg gaaggcaaag tcgg 24

<210> 241
<211> 48
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-48
<223> Synthetic construct.

<400> 241
ggcatcttac ctttatggag tactctttgc tgttggcctc tgtgctcc 48

<210> 242
<211> 2436
<212> DNA
<213> Homo sapiens

<400> 242
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 ctttctcaag aatcctctgt tctttgcct ctaaagtott ggtacatcta 200
 ggacccaggc atcttgcttt ccagccacaa agagacagat gaagatgcag 250
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 gccaccaact ctgagtccag cacaacctcc agtggggcca gcacagccac 600
 caactctgag tccagcacac cctccagtgg ggccagcaca gtcaccaact 650
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 aatactatat tgctcattta gctaagaaat aaatacatct catctaacac 2250
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 gatgaactca gttataggag aaaacctcca tgctggactc catctggcat 2350
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2436

<210> 243
 <211> 596
 <212> PRT
 <213> Homo sapiens

<400> 243
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 20 25 30
 Ala Asn Thr Gly Ser Ser Val Ile Ser Ser Gly Ala Ser Thr Ala
 35 40 45
 Thr Asn Ser Gly Ser Ser Val Thr Ser Ser Gly Val Ser Thr Ala
 50 55 60
 Thr Ile Ser Gly Ser Ser Val Thr Ser Asn Gly Val Ser Ile Val
 65 70 75

| | | | |
|---|-----|-----|-----|
| Thr Asn Ser Glu Phe His Thr Thr Ser Ser Gly Ile Ser Thr Ala | 80 | 85 | 90 |
| Thr Asn Ser Glu Phe Ser Thr Ala Ser Ser Gly Ile Ser Ile Ala | 95 | 100 | 105 |
| Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala | 110 | 115 | 120 |
| Thr Asn Ser Glu Ser Ser Thr Pro Ser Ser Gly Ala Ser Thr Val | 125 | 130 | 135 |
| Thr Asn Ser Gly Ser Ser Val Thr Ser Ser Gly Ala Ser Thr Ala | 140 | 145 | 150 |
| Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Arg Ala Ser Thr Ala | 155 | 160 | 165 |
| Thr Asn Ser Glu Ser Ser Thr Leu Ser Ser Gly Ala Ser Thr Ala | 170 | 175 | 180 |
| Thr Asn Ser Asp Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala | 185 | 190 | 195 |
| Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala | 200 | 205 | 210 |
| Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Arg Ala Ser Thr Ala | 215 | 220 | 225 |
| Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala | 230 | 235 | 240 |
| Thr Asn Ser Glu Ser Arg Thr Thr Ser Asn Gly Ala Gly Thr Ala | 245 | 250 | 255 |
| Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala | 260 | 265 | 270 |
| Thr Asn Ser Asp Ser Ser Thr Val Ser Ser Gly Ala Ser Thr Ala | 275 | 280 | 285 |
| Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala | 290 | 295 | 300 |
| Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Ser Thr Ala | 305 | 310 | 315 |
| Thr Asn Ser Asp Ser Ser Thr Thr Ser Ser Gly Ala Gly Thr Ala | 320 | 325 | 330 |
| Thr Asn Ser Glu Ser Ser Thr Val Ser Ser Gly Ile Ser Thr Val | 335 | 340 | 345 |
| Thr Asn Ser Glu Ser Ser Thr Pro Ser Ser Gly Ala Asn Thr Ala | 350 | 355 | 360 |
| Thr Asn Ser Glu Ser Ser Thr Thr Ser Ser Gly Ala Asn Thr Ala | | | |

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| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Val | Ser | Thr | Ala |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Ser | Thr | Ala |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Thr | Asn | Ser | Asp | Ser | Ser | Thr | Thr | Ser | Ser | Glu | Ala | Ser | Thr | Ala |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Val | Ser | Ser | Gly | Ile | Ser | Thr | Val |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Thr | Asn | Ser | Glu | Ser | Ser | Thr | Thr | Ser | Ser | Gly | Ala | Asn | Thr | Ala |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Thr | Asn | Ser | Gly | Ser | Ser | Val | Thr | Ser | Ala | Gly | Ser | Gly | Thr | Ala |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ala | Leu | Thr | Gly | Met | His | Thr | Thr | Ser | His | Ser | Ala | Ser | Thr | Ala |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Val | Ser | Glu | Ala | Lys | Pro | Gly | Gly | Ser | Leu | Val | Pro | Trp | Glu | Ile |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Phe | Leu | Ile | Thr | Leu | Val | Ser | Val | Val | Ala | Ala | Val | Gly | Leu | Phe |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Ala | Gly | Leu | Phe | Phe | Cys | Val | Arg | Asn | Ser | Leu | Ser | Leu | Arg | Asn |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Thr | Phe | Asn | Thr | Ala | Val | Tyr | His | Pro | His | Gly | Leu | Asn | His | Gly |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Leu | Gly | Pro | Gly | Pro | Gly | Gly | Asn | His | Gly | Ala | Pro | His | Arg | Pro |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Arg | Trp | Ser | Pro | Asn | Trp | Phe | Trp | Arg | Arg | Pro | Val | Ser | Ser | Ile |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Ala | Met | Glu | Met | Ser | Gly | Arg | Asn | Ser | Gly | Pro | | | | |
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 <212> DNA
 <213> Artificial

 <220>
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 <222> 1-26
 <223> Synthetic construct.

 <400> 244

gaagcaccag cctttatctc ttcacc 26

<210> 245

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic sequence.

<400> 245

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<210> 246

<211> 48

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-48

<223> Synthetic construct.

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<212> DNA

<213> Homo sapiens

<400> 247

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tccctccttc tgctactggg ggccctgtct ggatgggcgg ccagcgatga 150

ccccattgag aaggctcattg aagggatcaa ccgagggctg agcaatgcag 200

agagagaggt gggcaaggcc ctggatggca tcaacagtgg aatcacgcat 250

gccggaaggg aagtggagaa ggttttcaac ggacttagca acatggggag 300

ccacaccggc aaggagttgg acaaaggcgt ccaggggctc aaccacggca 350

tggacaaggt tgcccatgag atcaaccatg gtattggaca agcaggaaag 400

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ctgggaagga agcagagaaa cttggccaag gggtaacca tgctgctgac 550

caggctggaa aggaagtgga gaagcttggc caaggtgccc accatgctgc 600

tggccaggcc gggaaggagc tgcagaatgc tcataatggg gtcaaccaag 650
 ccagcaagga ggccaaccag ctgctgaatg gcaaccatca aagcggatct 700
 tccagccatc aaggaggggc cacaaccacg ccgttagcct ctgggggcctc 750
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 tacacca 957

<210> 248

<211> 247

<212> PRT

<213> Homo sapiens

<400> 248

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | His | Leu | Ala | Arg | Leu | Val | Gly | Ser | Cys | Ser | Leu | Leu | Leu | Leu | 1 | 5 | 10 | 15 |
| Leu | Gly | Ala | Leu | Ser | Gly | Trp | Ala | Ala | Ser | Asp | Asp | Pro | Ile | Glu | 20 | 25 | 30 | |
| Lys | Val | Ile | Glu | Gly | Ile | Asn | Arg | Gly | Leu | Ser | Asn | Ala | Glu | Arg | 35 | 40 | 45 | |
| Glu | Val | Gly | Lys | Ala | Leu | Asp | Gly | Ile | Asn | Ser | Gly | Ile | Thr | His | 50 | 55 | 60 | |
| Ala | Gly | Arg | Glu | Val | Glu | Lys | Val | Phe | Asn | Gly | Leu | Ser | Asn | Met | 65 | 70 | 75 | |
| Gly | Ser | His | Thr | Gly | Lys | Glu | Leu | Asp | Lys | Gly | Val | Gln | Gly | Leu | 80 | 85 | 90 | |
| Asn | His | Gly | Met | Asp | Lys | Val | Ala | His | Glu | Ile | Asn | His | Gly | Ile | 95 | 100 | 105 | |
| Gly | Gln | Ala | Gly | Lys | Glu | Ala | Glu | Lys | Leu | Gly | His | Gly | Val | Asn | 110 | 115 | 120 | |
| Asn | Ala | Ala | Gly | Gln | Ala | Gly | Lys | Glu | Ala | Asp | Lys | Ala | Val | Gln | 125 | 130 | 135 | |
| Gly | Phe | His | Thr | Gly | Val | His | Gln | Ala | Gly | Lys | Glu | Ala | Glu | Lys | 140 | 145 | 150 | |
| Leu | Gly | Gln | Gly | Val | Asn | His | Ala | Ala | Asp | Gln | Ala | Gly | Lys | Glu | 155 | 160 | 165 | |
| Val | Glu | Lys | Leu | Gly | Gln | Gly | Ala | His | His | Ala | Ala | Gly | Gln | Ala | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Lys | Glu | Leu | Gln | Asn | Ala | His | Asn | Gly | Val | Asn | Gln | Ala | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Lys | Glu | Ala | Asn | Gln | Leu | Leu | Asn | Gly | Asn | His | Gln | Ser | Gly | Ser |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Ser | Ser | His | Gln | Gly | Gly | Ala | Thr | Thr | Thr | Pro | Leu | Ala | Ser | Gly |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Ala | Ser | Val | Asn | Thr | Pro | Phe | Ile | Asn | Leu | Pro | Ala | Leu | Trp | Arg |
| | | | 230 | | | | | | 235 | | | | | 240 |
| Ser | Val | Ala | Asn | Ile | Met | Pro | | | | | | | | |
| | | | 245 | | | | | | | | | | | |

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<211> 23

<212> DNA

<213> Artificial

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<221> Artificial Sequence

<222> 1-23

<223> Synthetic construct.

<400> 249

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<210> 250

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 250

aagcttctct gcttcctttc ctgc 24

<210> 251

<211> 43

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-43

<223> Synthetic construct.

<400> 251

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<212> DNA

<213> Homo sapiens

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ggggcgacc gcggggcgga gctgccgcc gtgagtccg ccgagccacc 200
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<211> 837

<212> PRT

<213> Homo sapiens

<400> 253

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| 1 | | | | | 5 | | | | 10 | | | | | 15 |
| Trp | Gly | Ala | Leu | Pro | Pro | Arg | Pro | Pro | Leu | Leu | Leu | Leu | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Leu | Leu | Leu | Gln | Pro | Pro | Pro | Pro | Thr | Trp | Ala | Leu | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Arg | Ile | Ser | Leu | Pro | Leu | Gly | Ser | Glu | Glu | Arg | Pro | Phe | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Phe | Glu | Ala | Glu | His | Ile | Ser | Asn | Tyr | Thr | Ala | Leu | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Arg | Asp | Gly | Arg | Thr | Leu | Tyr | Val | Gly | Ala | Arg | Glu | Ala | Leu |

| 80 | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ala | Leu | Ser | Ser | Asn | Leu | Ser | Phe | Leu | Pro | Gly | Gly | Glu | Tyr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gln | Glu | Leu | Leu | Trp | Gly | Ala | Asp | Ala | Glu | Lys | Lys | Gln | Gln | Cys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Phe | Lys | Gly | Lys | Asp | Pro | Gln | Arg | Asp | Cys | Gln | Asn | Tyr | Ile |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Ile | Leu | Leu | Pro | Leu | Ser | Gly | Ser | His | Leu | Phe | Thr | Cys | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Thr | Ala | Ala | Phe | Ser | Pro | Met | Cys | Thr | Tyr | Ile | Asn | Met | Glu | Asn |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Phe | Thr | Leu | Ala | Arg | Asp | Glu | Lys | Gly | Asn | Val | Leu | Leu | Glu | Asp |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Lys | Gly | Arg | Cys | Pro | Phe | Asp | Pro | Asn | Phe | Lys | Ser | Thr | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Val | Val | Asp | Gly | Glu | Leu | Tyr | Thr | Gly | Thr | Val | Ser | Ser | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gln | Gly | Asn | Asp | Pro | Ala | Ile | Ser | Arg | Ser | Gln | Ser | Leu | Arg | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Lys | Thr | Glu | Ser | Ser | Leu | Asn | Trp | Leu | Gln | Asp | Pro | Ala | Phe |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Ala | Ser | Ala | Tyr | Ile | Pro | Glu | Ser | Leu | Gly | Ser | Leu | Gln | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Asp | Asp | Lys | Ile | Tyr | Phe | Phe | Phe | Ser | Glu | Thr | Gly | Gln | Glu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Phe | Glu | Phe | Phe | Glu | Asn | Thr | Ile | Val | Ser | Arg | Ile | Ala | Arg | Ile |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Cys | Lys | Gly | Asp | Glu | Gly | Gly | Glu | Arg | Val | Leu | Gln | Gln | Arg | Trp |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Thr | Ser | Phe | Leu | Lys | Ala | Gln | Leu | Leu | Cys | Ser | Arg | Pro | Asp | Asp |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Gly | Phe | Pro | Phe | Asn | Val | Leu | Gln | Asp | Val | Phe | Thr | Leu | Ser | Pro |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ser | Pro | Gln | Asp | Trp | Arg | Asp | Thr | Leu | Phe | Tyr | Gly | Val | Phe | Thr |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Ser | Gln | Trp | His | Arg | Gly | Thr | Thr | Glu | Gly | Ser | Ala | Val | Cys | Val |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Phe | Thr | Met | Lys | Asp | Val | Gln | Arg | Val | Phe | Ser | Gly | Leu | Tyr | Lys |
| | | | | 365 | | | | | 370 | | | | | 375 |

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|-----------------|---------------------|---------------------|-----|
| Glu Val Asn Arg | Glu Thr Gln Gln Trp | Tyr Thr Val Thr His | Pro |
| 380 | | 385 | 390 |
| Val Pro Thr Pro | Arg Pro Gly Ala Cys | Ile Thr Asn Ser Ala | Arg |
| 395 | | 400 | 405 |
| Glu Arg Lys Ile | Asn Ser Ser Leu Gln | Leu Pro Asp Arg Val | Leu |
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| Asn Phe Leu Lys | Asp His Phe Leu Met | Asp Gly Gln Val Arg | Ser |
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| Arg Met Leu Leu | Leu Gln Pro Gln Ala | Arg Tyr Gln Arg Val | Ala |
| 440 | | 445 | 450 |
| Val His Arg Val | Pro Gly Leu His His | Thr Tyr Asp Val Leu | Phe |
| 455 | | 460 | 465 |
| Leu Gly Thr Gly | Asp Gly Arg Leu His | Lys Ala Val Ser Val | Gly |
| 470 | | 475 | 480 |
| Pro Arg Val His | Ile Ile Glu Glu Leu | Gln Ile Phe Ser Ser | Gly |
| 485 | | 490 | 495 |
| Gln Pro Val Gln | Asn Leu Leu Leu Asp | Thr His Arg Gly Leu | Leu |
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| Tyr Ala Ala Ser | His Ser Gly Val Val | Gln Val Pro Met Ala | Asn |
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| Cys Ser Leu Tyr | Arg Ser Cys Gly Asp | Cys Leu Leu Ala Arg | Asp |
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| Pro Tyr Cys Ala | Trp Ser Gly Ser Ser | Cys Lys His Val Ser | Leu |
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| Tyr Gln Pro Gln | Leu Ala Thr Arg Pro | Trp Ile Gln Asp Ile | Glu |
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| Gly Ala Ser Ala | Lys Asp Leu Cys Ser | Ala Ser Ser Val Val | Ser |
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| Pro Ser Phe Val | Pro Thr Gly Glu Lys | Pro Cys Glu Gln Val | Gln |
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| Phe Gln Pro Asn | Thr Val Asn Thr Leu | Ala Cys Pro Leu Leu | Ser |
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| Asn Leu Ala Thr | Arg Leu Trp Leu Arg | Asn Gly Ala Pro Val | Asn |
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| Ala Ser Ala Ser | Cys His Val Leu Pro | Thr Gly Asp Leu Leu | Leu |
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| Val Gly Thr Gln | Gln Leu Gly Glu Phe | Gln Cys Trp Ser Leu | Glu |
| 650 | | 655 | 660 |
| Glu Gly Phe Gln | Gln Leu Val Ala Ser | Tyr Cys Pro Glu Val | Val |

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| Glu Asp Gly Val | Ala Asp Gln Thr Asp | Glu Gly Gly Ser Val Pro |
| 680 | 685 | 690 |
| Val Ile Ile Ser | Thr Ser Arg Val Ser | Ala Pro Ala Gly Gly Lys |
| 695 | 700 | 705 |
| Ala Ser Trp Gly | Ala Asp Arg Ser Tyr | Trp Lys Glu Phe Leu Val |
| 710 | 715 | 720 |
| Met Cys Thr Leu | Phe Val Leu Ala Val | Leu Leu Pro Val Leu Phe |
| 725 | 730 | 735 |
| Leu Leu Tyr Arg | His Arg Asn Ser Met | Lys Val Phe Leu Lys Gln |
| 740 | 745 | 750 |
| Gly Glu Cys Ala | Ser Val His Pro Lys | Thr Cys Pro Val Val Leu |
| 755 | 760 | 765 |
| Pro Pro Glu Thr | Arg Pro Leu Asn Gly | Leu Gly Pro Pro Ser Thr |
| 770 | 775 | 780 |
| Pro Leu Asp His | Arg Gly Tyr Gln Ser | Leu Ser Asp Ser Pro Pro |
| 785 | 790 | 795 |
| Gly Ala Arg Val | Phe Thr Glu Ser Glu | Lys Arg Pro Leu Ser Ile |
| 800 | 805 | 810 |
| Gln Asp Ser Phe | Val Glu Val Ser Pro | Val Cys Pro Arg Pro Arg |
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<400> 255
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<400> 256
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<210> 260

<211> 802

<212> PRT

<213> Homo sapiens

<400> 260

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Arg | Gly | Arg | Arg | Ala | Trp | Leu | Ser | Val | Leu | Leu | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Leu | Gly | Phe | Val | Leu | Ala | Ser | Arg | Leu | Val | Leu | Pro | Arg |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Glu | Leu | Lys | Arg | Ala | Gly | Pro | Arg | Arg | Arg | Ala | Ser | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Gly | Cys | Arg | Ser | Gly | Gln | Ala | Ala | Ala | Ser | Gln | Ala | Gly | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Gly | Asp | Ala | Arg | Gly | Ala | Gln | Leu | Trp | Pro | Pro | Gly | Ser |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Pro | Asp | Gly | Gly | Pro | Arg | Asp | Arg | Asn | Phe | Leu | Phe | Val | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Met | Thr | Ala | Gln | Lys | Tyr | Leu | Gln | Thr | Arg | Ala | Val | Ala | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Arg | Thr | Trp | Ser | Lys | Thr | Ile | Pro | Gly | Lys | Val | Gln | Phe | Phe |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ser | Glu | Gly | Ser | Asp | Thr | Ser | Val | Pro | Ile | Pro | Val | Val | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Gly | Val | Asp | Asp | Ser | Tyr | Pro | Pro | Gln | Lys | Lys | Ser | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Leu | Lys | Tyr | Met | His | Asp | His | Tyr | Leu | Asp | Lys | Tyr | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Phe | Met | Arg | Ala | Asp | Asp | Asp | Val | Tyr | Ile | Lys | Gly | Asp | Arg |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Glu | Asn | Phe | Leu | Arg | Ser | Leu | Asn | Ser | Ser | Glu | Pro | Leu | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Gln | Thr | Gly | Leu | Gly | Thr | Thr | Glu | Glu | Met | Gly | Lys | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Glu | Pro | Gly | Glu | Asn | Phe | Cys | Met | Gly | Gly | Pro | Gly | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Met | Ser | Arg | Glu | Val | Leu | Arg | Arg | Met | Val | Pro | His | Ile | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Lys Cys Leu Arg | Glu Met Tyr Thr Thr | His Glu Asp Val Glu Val | 245 | 250 | 255 |
| Gly Arg Cys Val | Arg Arg Phe Ala Gly | Val Gln Cys Val Trp Ser | 260 | 265 | 270 |
| Tyr Glu Met Arg | Gln Leu Phe Tyr Glu | Asn Tyr Glu Gln Asn Lys | 275 | 280 | 285 |
| Lys Gly Tyr Ile | Arg Asp Leu His Asn | Ser Lys Ile His Gln Ala | 290 | 295 | 300 |
| Ile Thr Leu His | Pro Asn Lys Asn Pro | Pro Tyr Gln Tyr Arg Leu | 305 | 310 | 315 |
| His Ser Tyr Met | Leu Ser Arg Lys Ile | Ser Glu Leu Arg His Arg | 320 | 325 | 330 |
| Thr Ile Gln Leu | His Arg Glu Ile Val | Leu Met Ser Lys Tyr Ser | 335 | 340 | 345 |
| Asn Thr Glu Ile | His Lys Glu Asp Leu | Gln Leu Gly Ile Pro Pro | 350 | 355 | 360 |
| Ser Phe Met Arg | Phe Gln Pro Arg Gln | Arg Glu Glu Ile Leu Glu | 365 | 370 | 375 |
| Trp Glu Phe Leu | Thr Gly Lys Tyr Leu | Tyr Ser Ala Val Asp Gly | 380 | 385 | 390 |
| Gln Pro Pro Arg | Arg Gly Met Asp Ser | Ala Gln Arg Glu Ala Leu | 395 | 400 | 405 |
| Asp Asp Ile Val | Met Gln Val Met Glu | Met Ile Asn Ala Asn Ala | 410 | 415 | 420 |
| Lys Thr Arg Gly | Arg Ile Ile Asp Phe | Lys Glu Ile Gln Tyr Gly | 425 | 430 | 435 |
| Tyr Arg Arg Val | Asn Pro Met Tyr Gly | Ala Glu Tyr Ile Leu Asp | 440 | 445 | 450 |
| Leu Leu Leu Leu | Tyr Lys Lys His Lys | Gly Lys Lys Met Thr Val | 455 | 460 | 465 |
| Pro Val Arg Arg | His Ala Tyr Leu Gln | Gln Thr Phe Ser Lys Ile | 470 | 475 | 480 |
| Gln Phe Val Glu | His Glu Glu Leu Asp | Ala Gln Glu Leu Ala Lys | 485 | 490 | 495 |
| Arg Ile Asn Gln | Glu Ser Gly Ser Leu | Ser Phe Leu Ser Asn Ser | 500 | 505 | 510 |
| Leu Lys Lys Leu | Val Pro Phe Gln Leu | Pro Gly Ser Lys Ser Glu | 515 | 520 | 525 |
| His Lys Glu Pro | Lys Asp Lys Lys Ile | Asn Ile Leu Ile Pro Leu | | | |

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100

| 530 | | | | | | | | | | 535 | | | | | 540 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ser | Gly | Arg | Phe | Asp | Met | Phe | Val | Arg | | Phe | Met | Gly | Asn | Phe | Glu | | | | |
| | | | | 545 | | | | | | 550 | | | | | 555 | | | | |
| Lys | Thr | Cys | Leu | Ile | Pro | Asn | Gln | Asn | | Val | Lys | Leu | Val | Val | Leu | | | | |
| | | | | 560 | | | | | | 565 | | | | | 570 | | | | |
| Leu | Phe | Asn | Ser | Asp | Ser | Asn | Pro | Asp | | Lys | Ala | Lys | Gln | Val | Glu | | | | |
| | | | | 575 | | | | | | 580 | | | | | 585 | | | | |
| Leu | Met | Arg | Asp | Tyr | Arg | Ile | Lys | Tyr | | Pro | Lys | Ala | Asp | Met | Gln | | | | |
| | | | | 590 | | | | | | 595 | | | | | 600 | | | | |
| Ile | Leu | Pro | Val | Ser | Gly | Glu | Phe | Ser | | Arg | Ala | Leu | Ala | Leu | Glu | | | | |
| | | | | 605 | | | | | | 610 | | | | | 615 | | | | |
| Val | Gly | Ser | Ser | Gln | Phe | Asn | Asn | Glu | | Ser | Leu | Leu | Phe | Phe | Cys | | | | |
| | | | | 620 | | | | | | 625 | | | | | 630 | | | | |
| Asp | Val | Asp | Leu | Val | Phe | Thr | Thr | Glu | | Phe | Leu | Gln | Arg | Cys | Arg | | | | |
| | | | | 635 | | | | | | 640 | | | | | 645 | | | | |
| Ala | Asn | Thr | Val | Leu | Gly | Gln | Gln | Ile | | Tyr | Phe | Pro | Ile | Ile | Phe | | | | |
| | | | | 650 | | | | | | 655 | | | | | 660 | | | | |
| Ser | Gln | Tyr | Asp | Pro | Lys | Ile | Val | Tyr | | Ser | Gly | Lys | Val | Pro | Ser | | | | |
| | | | | 665 | | | | | | 670 | | | | | 675 | | | | |
| Asp | Asn | His | Phe | Ala | Phe | Thr | Gln | Lys | | Thr | Gly | Phe | Trp | Arg | Asn | | | | |
| | | | | 680 | | | | | | 685 | | | | | 690 | | | | |
| Tyr | Gly | Phe | Gly | Ile | Thr | Cys | Ile | Tyr | | Lys | Gly | Asp | Leu | Val | Arg | | | | |
| | | | | 695 | | | | | | 700 | | | | | 705 | | | | |
| Val | Gly | Gly | Phe | Asp | Val | Ser | Ile | Gln | | Gly | Trp | Gly | Leu | Glu | Asp | | | | |
| | | | | 710 | | | | | | 715 | | | | | 720 | | | | |
| Val | Asp | Leu | Phe | Asn | Lys | Val | Val | Gln | | Ala | Gly | Leu | Lys | Thr | Phe | | | | |
| | | | | 725 | | | | | | 730 | | | | | 735 | | | | |
| Arg | Ser | Gln | Glu | Val | Gly | Val | Val | His | | Val | His | His | Pro | Val | Phe | | | | |
| | | | | 740 | | | | | | 745 | | | | | 750 | | | | |
| Cys | Asp | Pro | Asn | Leu | Asp | Pro | Lys | Gln | | Tyr | Lys | Met | Cys | Leu | Gly | | | | |
| | | | | 755 | | | | | | 760 | | | | | 765 | | | | |
| Ser | Lys | Ala | Ser | Thr | Tyr | Gly | Ser | Thr | | Gln | Gln | Leu | Ala | Glu | Met | | | | |
| | | | | 770 | | | | | | 775 | | | | | 780 | | | | |
| Trp | Leu | Glu | Lys | Asn | Asp | Pro | Ser | Tyr | | Ser | Lys | Ser | Ser | Asn | Asn | | | | |
| | | | | 785 | | | | | | 790 | | | | | 795 | | | | |
| Asn | Gly | Ser | Val | Arg | Thr | Ala | | | | | | | | | | | | | |
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 <211> 24

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<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 261
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<210> 262
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 262
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<210> 263
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<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

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<210> 264
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tccttctagt tgcgcttttg ctatggcctt cgtctgtgcc ggcttatccg 200
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tcaaaattta aggagctagt tacacatgga gacgcttcaa ctgagaatga 400

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 acaggcactt cttagtgaac ccagcaaccc agcatataga gaagatattg 900
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 aacaagtaat aaaattgatg acatcgaaac tgttattaac atgctgtgta 1050
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 ctgcattttt tcacaggaga aataatcata ttcgtaattt caaaagttgt 1300
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<210> 265

<211> 350

<212> PRT

<213> Homo sapiens

<400> 265

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Pro | Leu | Val | Leu | Leu | Val | Ala | Leu | Leu | Leu | Trp | Pro | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Pro | Ala | Tyr | Pro | Ser | Ile | Thr | Val | Thr | Pro | Asp | Glu | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Asn | Leu | Asn | His | Tyr | Ile | Gln | Val | Leu | Glu | Asn | Leu | Val | Arg |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Pro | Ser | Gly | Glu | Pro | Gly | Arg | Glu | Lys | Lys | Ser | Asn | Ser |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | | | |
|---|-----|-----|-----|
| Pro Lys His Val Tyr Ser Ile Ala Ser Lys Gly Ser Lys Phe Lys | 50 | 55 | 60 |
| 65 | 70 | 75 | |
| Glu Leu Val Thr His Gly Asp Ala Ser Thr Glu Asn Asp Val Leu | 80 | 85 | 90 |
| Thr Asn Pro Ile Ser Glu Glu Thr Thr Thr Phe Pro Thr Gly Gly | 95 | 100 | 105 |
| Phe Thr Pro Glu Ile Gly Lys Lys Lys His Thr Glu Ser Thr Pro | 110 | 115 | 120 |
| Phe Trp Ser Ile Lys Pro Asn Asn Val Ser Ile Val Leu His Ala | 125 | 130 | 135 |
| Glu Glu Pro Tyr Ile Glu Asn Glu Glu Pro Glu Pro Glu Pro Glu | 140 | 145 | 150 |
| Pro Ala Ala Lys Gln Thr Glu Ala Pro Arg Met Leu Pro Val Val | 155 | 160 | 165 |
| Thr Glu Ser Ser Thr Ser Pro Tyr Val Thr Ser Tyr Lys Ser Pro | 170 | 175 | 180 |
| Val Thr Thr Leu Asp Lys Ser Thr Gly Ile Glu Ile Ser Thr Glu | 185 | 190 | 195 |
| Ser Glu Asp Val Pro Gln Leu Ser Gly Glu Thr Ala Ile Glu Lys | 200 | 205 | 210 |
| Pro Glu Glu Phe Gly Lys His Pro Glu Ser Trp Asn Asn Asp Asp | 215 | 220 | 225 |
| Ile Leu Lys Lys Ile Leu Asp Ile Asn Ser Gln Val Gln Gln Ala | 230 | 235 | 240 |
| Leu Leu Ser Asp Thr Ser Asn Pro Ala Tyr Arg Glu Asp Ile Glu | 245 | 250 | 255 |
| Ala Ser Lys Asp His Leu Lys Arg Ser Leu Ala Leu Ala Ala Ala | 260 | 265 | 270 |
| Ala Glu His Lys Leu Lys Thr Met Tyr Lys Ser Gln Leu Leu Pro | 275 | 280 | 285 |
| Val Gly Arg Thr Ser Asn Lys Ile Asp Asp Ile Glu Thr Val Ile | 290 | 295 | 300 |
| Asn Met Leu Cys Asn Ser Arg Ser Lys Leu Tyr Glu Tyr Leu Asp | 305 | 310 | 315 |
| Ile Lys Cys Val Pro Pro Glu Met Arg Glu Lys Ala Ala Thr Val | 320 | 325 | 330 |
| Phe Asn Thr Leu Lys Asn Met Cys Arg Ser Arg Arg Val Thr Ala | 335 | 340 | 345 |

Leu Leu Lys Val Tyr
350

<210> 266

<211> 2403

<212> DNA

<213> Homo sapiens

<400> 266

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ttcatagtgt gagatcaacc cacaggaata tccatggctt ttgtgctcat 150
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gaccgggcaa gtttgtccag gccttgggtg gggaggacgc cgtgttctcc 250
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caggaatcag ttccatgctg tgggtccact ctacagagat ggggaagact 350
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atttccatcg tgggatatgt tgacggaggt atccagttac tctgcctgtc 600
ctcaggctgg ttccccagc ccacagccaa gtggaaaggt ccacaaggac 650
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gatgtggaga tctccattat agtccaggaa aatgctggga gcatattgtg 750
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<210> 267

<211> 466

<212> PRT

<213> Homo sapiens

<400> 267

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Phe | Val | Leu | Ile | Leu | Val | Leu | Ser | Phe | Tyr | Glu | Leu | Val |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

Ser Gly Gln Trp Gln Val Thr Gly Pro Gly Lys Phe Val Gln Ala

| | | |
|---|-----|-----|
| 20 | 25 | 30 |
| Leu Val Gly Glu Asp Ala Val Phe Ser Cys Ser Leu Phe Pro Glu | | |
| 35 | 40 | 45 |
| Thr Ser Ala Glu Ala Met Glu Val Arg Phe Phe Arg Asn Gln Phe | | |
| 50 | 55 | 60 |
| His Ala Val Val His Leu Tyr Arg Asp Gly Glu Asp Trp Glu Ser | | |
| 65 | 70 | 75 |
| Lys Gln Met Pro Gln Tyr Arg Gly Arg Thr Glu Phe Val Lys Asp | | |
| 80 | 85 | 90 |
| Ser Ile Ala Gly Gly Arg Val Ser Leu Arg Leu Lys Asn Ile Thr | | |
| 95 | 100 | 105 |
| Pro Ser Asp Ile Gly Leu Tyr Gly Cys Trp Phe Ser Ser Gln Ile | | |
| 110 | 115 | 120 |
| Tyr Asp Glu Glu Ala Thr Trp Glu Leu Arg Val Ala Ala Leu Gly | | |
| 125 | 130 | 135 |
| Ser Leu Pro Leu Ile Ser Ile Val Gly Tyr Val Asp Gly Gly Ile | | |
| 140 | 145 | 150 |
| Gln Leu Leu Cys Leu Ser Ser Gly Trp Phe Pro Gln Pro Thr Ala | | |
| 155 | 160 | 165 |
| Lys Trp Lys Gly Pro Gln Gly Gln Asp Leu Ser Ser Asp Ser Arg | | |
| 170 | 175 | 180 |
| Ala Asn Ala Asp Gly Tyr Ser Leu Tyr Asp Val Glu Ile Ser Ile | | |
| 185 | 190 | 195 |
| Ile Val Gln Glu Asn Ala Gly Ser Ile Leu Cys Ser Ile His Leu | | |
| 200 | 205 | 210 |
| Ala Glu Gln Ser His Glu Val Glu Ser Lys Val Leu Ile Gly Glu | | |
| 215 | 220 | 225 |
| Thr Phe Phe Gln Pro Ser Pro Trp Arg Leu Ala Ser Ile Leu Leu | | |
| 230 | 235 | 240 |
| Gly Leu Leu Cys Gly Ala Leu Cys Gly Val Val Met Gly Met Ile | | |
| 245 | 250 | 255 |
| Ile Val Phe Phe Lys Ser Lys Gly Lys Ile Gln Ala Glu Leu Asp | | |
| 260 | 265 | 270 |
| Trp Arg Arg Lys His Gly Gln Ala Glu Leu Arg Asp Ala Arg Lys | | |
| 275 | 280 | 285 |
| His Ala Val Glu Val Thr Leu Asp Pro Glu Thr Ala His Pro Lys | | |
| 290 | 295 | 300 |
| Leu Cys Val Ser Asp Leu Lys Thr Val Thr His Arg Lys Ala Pro | | |
| 305 | 310 | 315 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Glu | Val | Pro | His | Ser | Glu | Lys | Arg | Phe | Thr | Arg | Lys | Ser | Val | 320 | 325 | 330 |
| Val | Ala | Ser | Gln | Gly | Phe | Gln | Ala | Gly | Arg | His | Tyr | Trp | Glu | Val | 335 | 340 | 345 |
| Asp | Val | Gly | Gln | Asn | Val | Gly | Trp | Tyr | Val | Gly | Val | Cys | Arg | Asp | 350 | 355 | 360 |
| Asp | Val | Asp | Arg | Gly | Lys | Asn | Asn | Val | Thr | Leu | Ser | Pro | Asn | Asn | 365 | 370 | 375 |
| Gly | Tyr | Trp | Val | Leu | Arg | Leu | Thr | Thr | Glu | His | Leu | Tyr | Phe | Thr | 380 | 385 | 390 |
| Phe | Asn | Pro | His | Phe | Ile | Ser | Leu | Pro | Pro | Ser | Thr | Pro | Pro | Thr | 395 | 400 | 405 |
| Arg | Val | Gly | Val | Phe | Leu | Asp | Tyr | Glu | Gly | Gly | Thr | Ile | Ser | Phe | 410 | 415 | 420 |
| Phe | Asn | Thr | Asn | Asp | Gln | Ser | Leu | Ile | Tyr | Thr | Leu | Leu | Thr | Cys | 425 | 430 | 435 |
| Gln | Phe | Glu | Gly | Leu | Leu | Arg | Pro | Tyr | Ile | Gln | His | Ala | Met | Tyr | 440 | 445 | 450 |
| Asp | Glu | Glu | Lys | Gly | Thr | Pro | Ile | Phe | Ile | Cys | Pro | Val | Ser | Trp | 455 | 460 | 465 |

Gly

<210> 268
 <211> 2103
 <212> DNA
 <213> Homo sapiens

<400> 268
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 gtcatcttca tatccctgat tgccttggca gtgtgcattg gactcactgt 150
 tcattatgtg agatataatc aaaagaagac ctacaattac tatagcacat 200
 tgtcattttac aactgacaaa ctatatgctg agtttggcag agaggcttct 250
 aacaatttta cagaaatgag ccagagactt gaatcaatgg tgaaaaaatgc 300
 attttataaa tctccattaa gggaagaatt tgtcaagtct cagggttatca 350
 agttcagtca acagaagcat ggagtgttgg ctcatatgct gttgatttgt 400
 agatttcact ctactgagga tcctgaaact gtagataaaa ttgttcaact 450
 tgtttttacat gaaaagctgc aagatgctgt aggaccccoct aaagtagatc 500

ctcactcagt taaaattaaa aaaatcaaca agacagaaac agacagctat 550
ctaaaccatt gctgcggaac acgaagaagt aaaactctag gtcagagtct 600
caggatcggt ggtgggacag aagtagaaga gggatgaatgg ccctggcagg 650
ctagcctgca gtgggatggg agtcatcgct gtggagcaac ctttaattaat 700
gccacatggc ttgtgagtgc tgctcactgt tttaacaacat ataagaaccc 750
tgccagatgg actgcttcct ttggagtaac aataaaacct tcgaaaatga 800
aacggggtct ccggagaata attgtccatg aaaaatacaa acacccatca 850
catgactatg atattttctt tgacagagctt tctagccctg ttccctacac 900
aaatgcagta catagagttt gtctccctga tgcacccat gagtttcaac 950
caggtgatgt gatgtttgtg acaggatttg gagcactgaa aaatgatggt 1000
tacagtcaaa atcatcttcg acaagcacag gtgactctca tagacgctac 1050
aacttgcaat gaacctcaag cttacaatga cgccataact cctagaatgt 1100
tatgtgctgg ctcccttagaa ggaaaaacag atgcatgcca ggtgactct 1150
ggaggaccac tggtagttc agatgctaga gatattctgt accttgctgg 1200
aatagtgagc tggggagatg aatgtgcgaa acccaacaag cctggtgttt 1250
atactagagt tacggccttg cgggactgga ttacttcaaa aactggtatc 1300
taagagacaa aagcctcatg gaacagataa catTTTTTTT tgtTTTTTgg 1350
gtgtggaggc cTTTTTtaga gatacagaat tggagaagac ttgcaaaaca 1400
gctagatttg actgatctca ataaactgtt tgcttgatgc atgtattttc 1450
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tgtcatctgt gagcaatagt tgaaacttta tgtacataga gaaatagata 1550
atacaatatt acattacagc ctgtattcat ttgttctcta gaagttttgt 1600
cagaattttg acttggtgac ataaatttgt aatgcatata tacaatttga 1650
agcactcctt ttcttcagtt cctcagctcc tctcatTTTca gcaaatatcc 1700
atTTTcaagg tgcagaacaa ggagtgaag aaaatataag aagaaaaaaa 1750
ttccctacat ttatttgga cagaaaagta ttaggtgttt ttottagtgg 1800
aatattagaa atgatcatat tcattatgaa aggtcaagca aagacagcag 1850
aataccaatc acttcatcat ttaggaagta tgggaactaa gttaagggaag 1900
tccagaaaga agccaagata tatccttatt ttcatTTTcca aacaactact 1950

atgataaatg tgaagaagat tctgtttttt tgtgacctat aataattata 2000
 caaacttcat gcaatgtact tgttctaagc aaattaaagc aaatatttat 2050
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 cca 2103

<210> 269
 <211> 423
 <212> PRT
 <213> Homo sapiens

<400> 269
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 20 25 30
 Val Leu Ala Val Cys Ile Gly Leu Thr Val His Tyr Val Arg Tyr
 35 40 45
 Asn Gln Lys Lys Thr Tyr Asn Tyr Tyr Ser Thr Leu Ser Phe Thr
 50 55 60
 Thr Asp Lys Leu Tyr Ala Glu Phe Gly Arg Glu Ala Ser Asn Asn
 65 70 75
 Phe Thr Glu Met Ser Gln Arg Leu Glu Ser Met Val Lys Asn Ala
 80 85 90
 Phe Tyr Lys Ser Pro Leu Arg Glu Glu Phe Val Lys Ser Gln Val
 95 100 105
 Ile Lys Phe Ser Gln Gln Lys His Gly Val Leu Ala His Met Leu
 110 115 120
 Leu Ile Cys Arg Phe His Ser Thr Glu Asp Pro Glu Thr Val Asp
 125 130 135
 Lys Ile Val Gln Leu Val Leu His Glu Lys Leu Gln Asp Ala Val
 140 145 150
 Gly Pro Pro Lys Val Asp Pro His Ser Val Lys Ile Lys Lys Ile
 155 160 165
 Asn Lys Thr Glu Thr Asp Ser Tyr Leu Asn His Cys Cys Gly Thr
 170 175 180
 Arg Arg Ser Lys Thr Leu Gly Gln Ser Leu Arg Ile Val Gly Gly
 185 190 195
 Thr Glu Val Glu Glu Gly Glu Trp Pro Trp Gln Ala Ser Leu Gln
 200 205 210
 Trp Asp Gly Ser His Arg Cys Gly Ala Thr Leu Ile Asn Ala Thr
 215 220 225

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Val | Ser | Ala | Ala | His | Cys | Phe | Thr | Thr | Tyr | Lys | Asn | Pro | 230 | 235 | 240 |
| Ala | Arg | Trp | Thr | Ala | Ser | Phe | Gly | Val | Thr | Ile | Lys | Pro | Ser | Lys | 245 | 250 | 255 |
| Met | Lys | Arg | Gly | Leu | Arg | Arg | Ile | Ile | Val | His | Glu | Lys | Tyr | Lys | 260 | 265 | 270 |
| His | Pro | Ser | His | Asp | Tyr | Asp | Ile | Ser | Leu | Ala | Glu | Leu | Ser | Ser | 275 | 280 | 285 |
| Pro | Val | Pro | Tyr | Thr | Asn | Ala | Val | His | Arg | Val | Cys | Leu | Pro | Asp | 290 | 295 | 300 |
| Ala | Ser | Tyr | Glu | Phe | Gln | Pro | Gly | Asp | Val | Met | Phe | Val | Thr | Gly | 305 | 310 | 315 |
| Phe | Gly | Ala | Leu | Lys | Asn | Asp | Gly | Tyr | Ser | Gln | Asn | His | Leu | Arg | 320 | 325 | 330 |
| Gln | Ala | Gln | Val | Thr | Leu | Ile | Asp | Ala | Thr | Thr | Cys | Asn | Glu | Pro | 335 | 340 | 345 |
| Gln | Ala | Tyr | Asn | Asp | Ala | Ile | Thr | Pro | Arg | Met | Leu | Cys | Ala | Gly | 350 | 355 | 360 |
| Ser | Leu | Glu | Gly | Lys | Thr | Asp | Ala | Cys | Gln | Gly | Asp | Ser | Gly | Gly | 365 | 370 | 375 |
| Pro | Leu | Val | Ser | Ser | Asp | Ala | Arg | Asp | Ile | Trp | Tyr | Leu | Ala | Gly | 380 | 385 | 390 |
| Ile | Val | Ser | Trp | Gly | Asp | Glu | Cys | Ala | Lys | Pro | Asn | Lys | Pro | Gly | 395 | 400 | 405 |
| Val | Tyr | Thr | Arg | Val | Thr | Ala | Leu | Arg | Asp | Trp | Ile | Thr | Ser | Lys | 410 | 415 | 420 |

Thr Gly Ile

<210> 270

<211> 1170

<212> DNA

<213> Homo sapiens

<400> 270

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cagacgtcag ctggttgatt cccgctgcat caaggcctac ccaactgtctc 150

catgctgggc tctccctgcc ttctgtggct cctggccgtg accttcttgg 200

ttcccagagc tcagcccttg gccctcaag actttgaaga agaggaggca 250

gatgagactg agacggcgtg gccgcctttg ccggctgtcc cctgcgacta 300
cgaccactgc cgacacctgc aggtgccctg caaggagcta cagagggtcg 350
ggccggcggc ctgcctgtgc ccaggactct ccagccccgc ccagccgccc 400
gacccgcgcg gcattgggaga agtgcgcatc gcggccgaag agggccgcgc 450
agtgggtccac tgggtgtgcc ccttctcccc ggtcctccac tactggctgc 500
tgctttggga cggcagcgag gctgcgcaga aggggcccc gctgaacgct 550
acggtccgca gagccgaact gaaggggctg aagccagggg gcatttatgt 600
cgtttgcgta gtggccgcta acgaggccgg ggcaagccgc gtgccccagg 650
ctggaggaga gggcctcgag ggggcccaca tccctgcctt cgggccttgc 700
agccgccttg cggtgccgcc caacccccgc actctggtcc acgcggccgt 750
cggggtgggc acggccctgg cctgtctaag ctgtgccgcc ctggtgtggc 800
acttctgcct gcgcgatcgc tggggctgcc cgcgccgagc cgccgcccga 850
gccgcagggg cgctctgaaa ggggcctggg ggcatctcgg gcacagacag 900
ccccacctgg ggcgtcagc ctggcccccg ggaaagagga aaacccgctg 950
cctccaggga gggctggacg gcgagctggg agccagcccc aggtccagg 1000
gccacggcgg agtcatgggt ctcaggactg agcgttgtt taggtccggt 1050
acttggcgct ttgtttcctg gctgaggtct gggaaggaat agaaaggggc 1100
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ttaaaaaaaaa aaaaaaaaaa 1170

<210> 271
<211> 238
<212> PRT
<213> Homo sapiens

<400> 271
Met Leu Gly Ser Pro Cys Leu Leu Trp Leu Leu Ala Val Thr Phe
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Leu Val Pro Arg Ala Gln Pro Leu Ala Pro Gln Asp Phe Glu Glu
20 25 30
Glu Glu Ala Asp Glu Thr Glu Thr Ala Trp Pro Pro Leu Pro Ala
35 40 45
Val Pro Cys Asp Tyr Asp His Cys Arg His Leu Gln Val Pro Cys
50 55 60
Lys Glu Leu Gln Arg Val Gly Pro Ala Ala Cys Leu Cys Pro Gly
65 70 75

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Ser | Ser | Pro | Ala | Gln | Pro | Pro | Asp | Pro | Pro | Arg | Met | Gly | Glu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Val | Arg | Ile | Ala | Ala | Glu | Glu | Gly | Arg | Ala | Val | Val | His | Trp | Cys | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Pro | Phe | Ser | Pro | Val | Leu | His | Tyr | Trp | Leu | Leu | Leu | Trp | Asp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Ser | Glu | Ala | Ala | Gln | Lys | Gly | Pro | Pro | Leu | Asn | Ala | Thr | Val | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Arg | Arg | Ala | Glu | Leu | Lys | Gly | Leu | Lys | Pro | Gly | Gly | Ile | Tyr | Val | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Val | Cys | Val | Val | Ala | Ala | Asn | Glu | Ala | Gly | Ala | Ser | Arg | Val | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gln | Ala | Gly | Gly | Glu | Gly | Leu | Glu | Gly | Ala | Asp | Ile | Pro | Ala | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Pro | Cys | Ser | Arg | Leu | Ala | Val | Pro | Pro | Asn | Pro | Arg | Thr | Leu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Val | His | Ala | Ala | Val | Gly | Val | Gly | Thr | Ala | Leu | Ala | Leu | Leu | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Cys | Ala | Ala | Leu | Val | Trp | His | Phe | Cys | Leu | Arg | Asp | Arg | Trp | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Cys | Pro | Arg | Arg | Ala | Ala | Ala | Arg | Ala | Ala | Gly | Ala | Leu | | | |
| | | | | 230 | | | | | 235 | | | | | | |

<210> 272
 <211> 2397
 <212> DNA
 <213> Homo sapiens

<400> 272
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 cccaggcggg cgtggggcac cgggccagc gccgacgatc gctgccgttt 150
 tgccottggg agtaggatgt ggtgaaagga tggggcttct cccttacggg 200
 gctcacaatg gccagagaag attccgtgaa gtgtctgcgc tgctgtctct 250
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 tctgcttgga tgagggacta cctaaataat gttctcactt taactgcaga 350
 aacgagggta gaggaagcag tcattttgac ttactttcct gtggttcatc 400
 cggatcatgat tgctgtttgc tgtttcctta tcattgtggg gatgttagga 450
 tattgtggaa cggtgaaaag aaatctgttg cttcttgcat ggtactttgg 500

aagtttgctt gtcattttct gtgtagaact ggcttgtggc gtttggacat 550
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aaagccagga tgacaaatta tggattacct agatatcggt ggcttactca 650
tgcttggaaat ttttttcaga gagagtttaa gtgctgtgga gtagtatatt 700
tactgactg gttggaaatg acagagatgg actggcccc agattcctgc 750
tgtgttagag aattcccagg atgttccaaa caggcccacc aggaagatct 800
cagtgcactt tatcaagagg gttgtgggaa gaaaatgtat tcctttttga 850
gaggaaccaa acaactgcag gtgctgaggt ttctgggaat ctccattggg 900
gtgacacaaa tcctggccat gattctcacc attactctgc tctgggctct 950
gtattatgat agaagggagc ctgggacaga ccaaatgatg tccttgaaga 1000
atgacaactc tcagcacctg tcatgtccct cagtagaact gttgaaacca 1050
agcctgtcaa gaatctttga acacacatcc atggcaaaca gotttaatac 1100
acactttgag atggaggagt tataaaaaga aatgtcacag aagaaaacca 1150
caaacttggt ttattggact tgtgaatttt tgagtacata ctatgtgttt 1200
cagaaatatg tagaaataaa aatgttgcca taaaataaca cctaagcata 1250
tactattcta tgctttaaaa tgaggatgga aaagtttcat gtcataagtc 1300
accacctgga caataattga tgcccttaaa atgctgaaga cagatgtcat 1350
accactgtg tagcctgtgt atgactttta ctgaacacag ttatgttttg 1400
aggcagcatg gtttgattag catttccgca tccatgcaaa cgagtcacat 1450
atggtgggac tggagccata gtaaagggtg atttacttct accaactagt 1500
atataaagta ctaattaaat gctaacatag gaagttagaa aatactaata 1550
acttttatta ctacgcgatc tattcttctg atgctaaata aattatatat 1600
cagaaaactt tcaatattgg tgactaccta aatgtgattt ttgctgggta 1650
ctaaaatatt ctaccactt aaaagagcaa gctaacacat tgtcttaagc 1700
tgatcagga ttttttgtat ataagtctgt gttaaatctg tataattcag 1750
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ttgtcctgta tagcatcatt attttttagcc tttcctgtta ataaagcttt 1850
actattctgt cctgggotta tattacacat ataactgtta tttaaatact 1900
taaccactaa ttttgaaaat taccagtgtg atacatagga atcattattc 1950

agaatgtagt ctggtcttta ggaagtatta ataagaaaat ttgcacataa 2000
 cttagttgat tcagaaagga cttgtatgct gtttttctcc caaatgaaga 2050
 ctctttttga cactaaacac tttttaaaaa gcttatcttt gccttctcca 2100
 aacaagaagc aatagttctcc aagtcaatat aaattctaca gaaaatagtg 2150
 ttctttttct ccagaaaaat gcttgtgaga atcattaataa catgtgacaa 2200
 tttagagatt ctttgtttta tttcactgat taatatactg tggcaaatta 2250
 cacagattat taaatttttt tacaagagta tagtatattt atttgaaatg 2300
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 atggaaagaa aattaaaatg tgtcaataaa tattttctag agagtaa 2397

<210> 273

<211> 305

<212> PRT

<213> Homo sapiens

<400> 273

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Arg | Glu | Asp | Ser | Val | Lys | Cys | Leu | Arg | Cys | Leu | Leu | Tyr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Asn | Leu | Leu | Phe | Trp | Leu | Met | Ser | Ile | Ser | Val | Leu | Ala |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Ala | Trp | Met | Arg | Asp | Tyr | Leu | Asn | Asn | Val | Leu | Thr | Leu |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Glu | Thr | Arg | Val | Glu | Glu | Ala | Val | Ile | Leu | Thr | Tyr | Phe |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Val | Val | His | Pro | Val | Met | Ile | Ala | Val | Cys | Cys | Phe | Leu | Ile |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Val | Gly | Met | Leu | Gly | Tyr | Cys | Gly | Thr | Val | Lys | Arg | Asn | Leu |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Ala | Trp | Tyr | Phe | Gly | Ser | Leu | Leu | Val | Ile | Phe | Cys |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Glu | Leu | Ala | Cys | Gly | Val | Trp | Thr | Tyr | Glu | Gln | Glu | Leu | Met |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Val | Gln | Trp | Ser | Asp | Met | Val | Thr | Leu | Lys | Ala | Arg | Met |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asn | Tyr | Gly | Leu | Pro | Arg | Tyr | Arg | Trp | Leu | Thr | His | Ala | Trp |
| | | | 140 | | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Phe | Phe | Gln | Arg | Glu | Phe | Lys | Cys | Cys | Gly | Val | Val | Tyr | Phe |
| | | | 155 | | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asp | Trp | Leu | Glu | Met | Thr | Glu | Met | Asp | Trp | Pro | Pro | Asp | Ser |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 170 | 175 | 180 |
|---|-----|-----|
| Cys Cys Val Arg Glu Phe Pro Gly Cys Ser Lys Gln Ala His Gln | | |
| 185 | 190 | 195 |
| Glu Asp Leu Ser Asp Leu Tyr Gln Glu Gly Cys Gly Lys Lys Met | | |
| 200 | 205 | 210 |
| Tyr Ser Phe Leu Arg Gly Thr Lys Gln Leu Gln Val Leu Arg Phe | | |
| 215 | 220 | 225 |
| Leu Gly Ile Ser Ile Gly Val Thr Gln Ile Leu Ala Met Ile Leu | | |
| 230 | 235 | 240 |
| Thr Ile Thr Leu Leu Trp Ala Leu Tyr Tyr Asp Arg Arg Glu Pro | | |
| 245 | 250 | 255 |
| Gly Thr Asp Gln Met Met Ser Leu Lys Asn Asp Asn Ser Gln His | | |
| 260 | 265 | 270 |
| Leu Ser Cys Pro Ser Val Glu Leu Leu Lys Pro Ser Leu Ser Arg | | |
| 275 | 280 | 285 |
| Ile Phe Glu His Thr Ser Met Ala Asn Ser Phe Asn Thr His Phe | | |
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<211> 2063

<212> DNA

<213> Homo sapiens

<400> 274

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<212> PRT

<213> Homo sapiens

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Tyr Phe Leu Cys Gly Gln Pro Leu His Phe Ile Pro Arg Lys Gln
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Leu Cys Asp Gly Glu Leu Asp Cys Pro Leu Gly Glu Asp Glu Glu
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His Cys Val Lys Ser Phe Pro Glu Gly Pro Ala Val Ala Val Arg
95 100 105

Leu Ser Lys Asp Arg Ser Thr Leu Gln Val Leu Asp Ser Ala Thr
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Gly Asn Trp Phe Ser Ala Cys Phe Asp Asn Phe Thr Glu Ala Leu
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Ala Glu Thr Ala Cys Arg Gln Met Gly Tyr Ser Arg Ala Val Glu
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155 160 165

Ser Gln Glu Leu Arg Met Arg Asn Ser Ser Gly Pro Cys Leu Ser
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Gly Ser Leu Val Ser Leu His Cys Leu Ala Cys Gly Lys Ser Leu
185 190 195

Lys Thr Pro Arg Val Val Gly Gly Glu Glu Ala Ser Val Asp Ser
200 205 210

Trp Pro Trp Gln Val Ser Ile Gln Tyr Asp Lys Gln His Val Cys
215 220 225

Gly Gly Ser Ile Leu Asp Pro His Trp Val Leu Thr Ala Ala His
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Cys Phe Arg Lys His Thr Asp Val Phe Asn Trp Lys Val Arg Ala
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| Ile Ala Leu Met | Lys Leu Gln Phe Pro | Leu Thr Phe Ser Gly | Thr |
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| Val Arg Pro Ile | Cys Leu Pro Phe Phe | Asp Glu Glu Leu Thr | Pro |
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| Gly Gly Lys Met | Ser Asp Ile Leu Leu | Gln Ala Ser Val Gln | Val |
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| Ile Asp Ser Thr | Arg Cys Asn Ala Asp | Asp Ala Tyr Gln Gly | Glu |
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| Val Thr Glu Lys | Met Met Cys Ala Gly | Ile Pro Glu Gly Gly | Val |
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| Asp Thr Cys Gln | Gly Asp Ser Gly Gly | Pro Leu Met Tyr Gln | Ser |
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| Asp Gln Trp His | Val Val Gly Ile Val | Ser Trp Gly Tyr Gly | Cys |
| 395 | 400 | | 405 |
| Gly Gly Pro Ser | Thr Pro Gly Val Tyr | Thr Lys Val Ser Ala | Tyr |
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 <211> 761
 <212> PRT
 <213> Homo sapiens

 <400> 277

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| Met | Ala | Leu | Pro | Ala | Leu | Gly | Leu | Asp | Pro | Trp | Ser | Leu | Leu | Gly | 1 | 5 | 10 | 15 |
| Leu | Phe | Leu | Phe | Gln | Leu | Leu | Gln | Leu | Leu | Leu | Pro | Thr | Thr | Thr | 20 | 25 | 30 | |
| Ala | Gly | Gly | Gly | Gly | Gln | Gly | Pro | Met | Pro | Arg | Val | Arg | Tyr | Tyr | 35 | 40 | 45 | |
| Ala | Gly | Asp | Glu | Arg | Arg | Ala | Leu | Ser | Phe | Phe | His | Gln | Lys | Gly | 50 | 55 | 60 | |
| Leu | Gln | Asp | Phe | Asp | Thr | Leu | Leu | Leu | Ser | Gly | Asp | Gly | Asn | Thr | 65 | 70 | 75 | |
| Leu | Tyr | Val | Gly | Ala | Arg | Glu | Ala | Ile | Leu | Ala | Leu | Asp | Ile | Gln | 80 | 85 | 90 | |
| Asp | Pro | Gly | Val | Pro | Arg | Leu | Lys | Asn | Met | Ile | Pro | Trp | Pro | Ala | 95 | 100 | 105 | |
| Ser | Asp | Arg | Lys | Lys | Ser | Glu | Cys | Ala | Phe | Lys | Lys | Lys | Ser | Asn | 110 | 115 | 120 | |
| Glu | Thr | Gln | Cys | Phe | Asn | Phe | Ile | Arg | Val | Leu | Val | Ser | Tyr | Asn | 125 | 130 | 135 | |
| Val | Thr | His | Leu | Tyr | Thr | Cys | Gly | Thr | Phe | Ala | Phe | Ser | Pro | Ala | 140 | 145 | 150 | |
| Cys | Thr | Phe | Ile | Glu | Leu | Gln | Asp | Ser | Tyr | Leu | Leu | Pro | Ile | Ser | 155 | 160 | 165 | |
| Glu | Asp | Lys | Val | Met | Glu | Gly | Lys | Gly | Gln | Ser | Pro | Phe | Asp | Pro | 170 | 175 | 180 | |
| Ala | His | Lys | His | Thr | Ala | Val | Leu | Val | Asp | Gly | Met | Leu | Tyr | Ser | 185 | 190 | 195 | |
| Gly | Thr | Met | Asn | Asn | Phe | Leu | Gly | Ser | Glu | Pro | Ile | Leu | Met | Arg | 200 | 205 | 210 | |
| Thr | Leu | Gly | Ser | Gln | Pro | Val | Leu | Lys | Thr | Asp | Asn | Phe | Leu | Arg | 215 | 220 | 225 | |
| Trp | Leu | His | His | Asp | Ala | Ser | Phe | Val | Ala | Ala | Ile | Pro | Ser | Thr | 230 | 235 | 240 | |
| Gln | Val | Val | Tyr | Phe | Phe | Phe | Glu | Glu | Thr | Ala | Ser | Glu | Phe | Asp | 245 | 250 | 255 | |
| Phe | Phe | Glu | Arg | Leu | His | Thr | Ser | Arg | Val | Ala | Arg | Val | Cys | Lys | 260 | 265 | 270 | |
| Asn | Asp | Val | Gly | Gly | Glu | Lys | Leu | Leu | Gln | Lys | Lys | Trp | Thr | Thr | 275 | 280 | 285 | |
| Phe | Leu | Lys | Ala | Gln | Leu | Leu | Cys | Thr | Gln | Pro | Gly | Gln | Leu | Pro | | | | |

| 290 | 295 | 300 |
|-------------------------------------|-------------------------|-----|
| Phe Asn Val Ile Arg His Ala Val Leu | Leu Pro Ala Asp Ser Pro | |
| 305 | 310 | 315 |
| Thr Ala Pro His Ile Tyr Ala Val Phe | Thr Ser Gln Trp Gln Val | |
| 320 | 325 | 330 |
| Gly Gly Thr Arg Ser Ser Ala Val Cys | Ala Phe Ser Leu Leu Asp | |
| 335 | 340 | 345 |
| Ile Glu Arg Val Phe Lys Gly Lys Tyr | Lys Glu Leu Asn Lys Glu | |
| 350 | 355 | 360 |
| Thr Ser Arg Trp Thr Thr Tyr Arg Gly | Pro Glu Thr Asn Pro Arg | |
| 365 | 370 | 375 |
| Pro Gly Ser Cys Ser Val Gly Pro Ser | Ser Asp Lys Ala Leu Thr | |
| 380 | 385 | 390 |
| Phe Met Lys Asp His Phe Leu Met Asp | Glu Gln Val Val Gly Thr | |
| 395 | 400 | 405 |
| Pro Leu Leu Val Lys Ser Gly Val Glu | Tyr Thr Arg Leu Ala Val | |
| 410 | 415 | 420 |
| Glu Thr Ala Gln Gly Leu Asp Gly His | Ser His Leu Val Met Tyr | |
| 425 | 430 | 435 |
| Leu Gly Thr Thr Thr Gly Ser Leu His | Lys Ala Val Val Ser Gly | |
| 440 | 445 | 450 |
| Asp Ser Ser Ala His Leu Val Glu Glu | Ile Gln Leu Phe Pro Asp | |
| 455 | 460 | 465 |
| Pro Glu Pro Val Arg Asn Leu Gln Leu | Ala Pro Thr Gln Gly Ala | |
| 470 | 475 | 480 |
| Val Phe Val Gly Phe Ser Gly Gly Val | Trp Arg Val Pro Arg Ala | |
| 485 | 490 | 495 |
| Asn Cys Ser Val Tyr Glu Ser Cys Val | Asp Cys Val Leu Ala Arg | |
| 500 | 505 | 510 |
| Asp Pro His Cys Ala Trp Asp Pro Glu | Ser Arg Thr Cys Cys Leu | |
| 515 | 520 | 525 |
| Leu Ser Ala Pro Asn Leu Asn Ser Trp | Lys Gln Asp Met Glu Arg | |
| 530 | 535 | 540 |
| Gly Asn Pro Glu Trp Ala Cys Ala Ser | Gly Pro Met Ser Arg Ser | |
| 545 | 550 | 555 |
| Leu Arg Pro Gln Ser Arg Pro Gln Ile | Ile Lys Glu Val Leu Ala | |
| 560 | 565 | 570 |
| Val Pro Asn Ser Ile Leu Glu Leu Pro | Cys Pro His Leu Ser Ala | |
| 575 | 580 | 585 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Ser | Tyr | Tyr | Trp | Ser | His | Gly | Pro | Ala | Ala | Val | Pro | Glu |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Ala | Ser | Ser | Thr | Val | Tyr | Asn | Gly | Ser | Leu | Leu | Leu | Ile | Val | Gln |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Asp | Gly | Val | Gly | Gly | Leu | Tyr | Gln | Cys | Trp | Ala | Thr | Glu | Asn | Gly |
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| Phe | Ser | Tyr | Pro | Val | Ile | Ser | Tyr | Trp | Val | Asp | Ser | Gln | Asp | Gln |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Thr | Leu | Ala | Leu | Asp | Pro | Glu | Leu | Ala | Gly | Ile | Pro | Arg | Glu | His |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Val | Lys | Val | Pro | Leu | Thr | Arg | Val | Ser | Gly | Gly | Ala | Ala | Leu | Ala |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Ala | Gln | Gln | Ser | Tyr | Trp | Pro | His | Phe | Val | Thr | Val | Thr | Val | Leu |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Phe | Ala | Leu | Val | Leu | Ser | Gly | Ala | Leu | Ile | Ile | Leu | Val | Ala | Ser |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Pro | Leu | Arg | Ala | Leu | Arg | Ala | Arg | Gly | Lys | Val | Gln | Gly | Cys | Glu |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Thr | Leu | Arg | Pro | Gly | Glu | Lys | Ala | Pro | Leu | Ser | Arg | Glu | Gln | His |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Leu | Gln | Ser | Pro | Lys | Glu | Cys | Arg | Thr | Ser | Ala | Ser | Asp | Val | Asp |
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<210> 279
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 <212> DNA
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<220>
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<210> 280
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 ttctgttttg ttctcccaca tattctcttc aatgctcagg aagcctgccc 2150
 tgtgcttgag agttcagggc cggacacagg ctcacaggtc tocacattgg 2200
 gtccctgtct ctgggtgccc cagtgaagctc cttcttggtg gagcaggcat 2250
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<210> 282
 <211> 523
 <212> PRT
 <213> Homo sapiens

<400> 282

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Gly | Gln | Arg | Val | Leu | Leu | Leu | Val | Gly | Phe | Leu | Leu | Pro | 1 | 5 | 10 | 15 |
| Gly | Val | Leu | Leu | Ser | Glu | Ala | Ala | Lys | Ile | Leu | Thr | Ile | Ser | Thr | 20 | 25 | 30 | |
| Val | Gly | Gly | Ser | His | Tyr | Leu | Leu | Met | Asp | Arg | Val | Ser | Gln | Ile | 35 | 40 | 45 | |
| Leu | Gln | Asp | His | Gly | His | Asn | Val | Thr | Met | Leu | Asn | His | Lys | Arg | 50 | 55 | 60 | |
| Gly | Pro | Phe | Met | Pro | Asp | Phe | Lys | Lys | Glu | Glu | Lys | Ser | Tyr | Gln | 65 | 70 | 75 | |
| Val | Ile | Ser | Trp | Leu | Ala | Pro | Glu | Asp | His | Gln | Arg | Glu | Phe | Lys | 80 | 85 | 90 | |
| Lys | Ser | Phe | Asp | Phe | Phe | Leu | Glu | Glu | Thr | Leu | Gly | Gly | Arg | Gly | 95 | 100 | 105 | |
| Lys | Phe | Glu | Asn | Leu | Leu | Asn | Val | Leu | Glu | Tyr | Leu | Ala | Leu | Gln | 110 | 115 | 120 | |
| Cys | Ser | His | Phe | Leu | Asn | Arg | Lys | Asp | Ile | Met | Asp | Ser | Leu | Lys | 125 | 130 | 135 | |
| Asn | Glu | Asn | Phe | Asp | Met | Val | Ile | Val | Glu | Thr | Phe | Asp | Tyr | Cys | 140 | 145 | 150 | |
| Pro | Phe | Leu | Ile | Ala | Glu | Lys | Leu | Gly | Lys | Pro | Phe | Val | Ala | Ile | 155 | 160 | 165 | |
| Leu | Ser | Thr | Ser | Phe | Gly | Ser | Leu | Glu | Phe | Gly | Leu | Pro | Ile | Pro | 170 | 175 | 180 | |
| Leu | Ser | Tyr | Val | Pro | Val | Phe | Arg | Ser | Leu | Leu | Thr | Asp | His | Met | 185 | 190 | 195 | |
| Asp | Phe | Trp | Gly | Arg | Val | Lys | Asn | Phe | Leu | Met | Phe | Phe | Ser | Phe | 200 | 205 | 210 | |
| Cys | Arg | Arg | Gln | Gln | His | Met | Gln | Ser | Thr | Phe | Asp | Asn | Thr | Ile | 215 | 220 | 225 | |
| Lys | Glu | His | Phe | Thr | Glu | Gly | Ser | Arg | Pro | Val | Leu | Ser | His | Leu | 230 | 235 | 240 | |
| Leu | Leu | Lys | Ala | Glu | Leu | Trp | Phe | Ile | Asn | Ser | Asp | Phe | Ala | Phe | 245 | 250 | 255 | |
| Asp | Phe | Ala | Arg | Pro | Leu | Leu | Pro | Asn | Thr | Val | Tyr | Val | Gly | Gly | | | | |

| 260 | | | | | 265 | | | | | 270 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Met | Glu | Lys | Pro | Ile | Lys | Pro | Val | Pro | Gln | Asp | Leu | Glu | Asn |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Phe | Ile | Ala | Lys | Phe | Gly | Asp | Ser | Gly | Phe | Val | Leu | Val | Thr | Leu |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Gly | Ser | Met | Val | Asn | Thr | Cys | Gln | Asn | Pro | Glu | Ile | Phe | Lys | Glu |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Met | Asn | Asn | Ala | Phe | Ala | His | Leu | Pro | Gln | Gly | Val | Ile | Trp | Lys |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Cys | Gln | Cys | Ser | His | Trp | Pro | Lys | Asp | Val | His | Leu | Ala | Ala | Asn |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Val | Lys | Ile | Val | Asp | Trp | Leu | Pro | Gln | Ser | Asp | Leu | Leu | Ala | His |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Pro | Ser | Ile | Arg | Leu | Phe | Val | Thr | His | Gly | Gly | Gln | Asn | Ser | Ile |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Met | Glu | Ala | Ile | Gln | His | Gly | Val | Pro | Met | Val | Gly | Ile | Pro | Leu |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Phe | Gly | Asp | Gln | Pro | Glu | Asn | Met | Val | Arg | Val | Glu | Ala | Lys | Lys |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Phe | Gly | Val | Ser | Ile | Gln | Leu | Lys | Lys | Leu | Lys | Ala | Glu | Thr | Leu |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Ala | Leu | Lys | Met | Lys | Gln | Ile | Met | Glu | Asp | Lys | Arg | Tyr | Lys | Ser |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Ala | Ala | Val | Ala | Ala | Ser | Val | Ile | Leu | Arg | Ser | His | Pro | Leu | Ser |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Pro | Thr | Gln | Arg | Leu | Val | Gly | Trp | Ile | Asp | His | Val | Leu | Gln | Thr |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Gly | Gly | Ala | Thr | His | Leu | Lys | Pro | Tyr | Val | Phe | Gln | Gln | Pro | Trp |
| | | | | 470 | | | | | 475 | | | | | 480 |
| His | Glu | Gln | Tyr | Leu | Phe | Asp | Val | Phe | Val | Phe | Leu | Leu | Gly | Leu |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Thr | Leu | Gly | Thr | Leu | Trp | Leu | Cys | Gly | Lys | Leu | Leu | Gly | Met | Ala |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Val | Trp | Trp | Leu | Arg | Gly | Ala | Arg | Lys | Val | Lys | Glu | Thr | | |
| | | | | 515 | | | | | 520 | | | | | |

<210> 283
 <211> 24
 <212> DNA
 <213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 283
tgcctttgct cacctacccc aagg 24

<210> 284
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 284
tcaggctggt ctccaaagag aggg 24

<210> 285
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 285
cccaaagatg tccacctggc tgcaaattgtg aaaattgtgg actgg 45

<210> 286
<211> 2340
<212> DNA
<213> Homo sapiens

<400> 286
gggctgttga tttgtggggg attttgaaga gaggaggaat aggaggaagg 50
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cccgtcacac acacatacca tgttctccat ccccccaggt ccagccctca 150
gtgctgtccc atccagcagg gctaccctga agctctggct gcagccctcc 200
cgtccagtgg gcaggcggct tcatccctcc tttctctccc aaagcccaac 250
tgctgtcact gcatgctctg ccaaggagga gggaactgca gtgacagcag 300
gagtaagagt gggaggcagg acagagctgg gacacaggta tggagagggg 350
gttcagcgag cctagagagg gcagactatc agggtgccgg cggtgagaat 400
ccaggagag gagcggaac agaagagggg cagaagaccg gggcacttgt 450

gggttgcaga gcccctcagc catgttggga gccaaagccac actggctacc 500
 aggtccccta cacagtcccg gggtgccctt ggttctggtg cttctggccc 550
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 gggagcagcc ctgggagagg cccccctgg gcgagtggca tttgctgcgg 700
 tccgaagcca ccaccatgag ccagcagggg aaaccggcaa tggcaccagt 750
 ggggccatct acttcgacca ggtcctggtg aacgagggcg gtggctttga 800
 ccgggcctct ggctccttcg tagcccctgt ccggggtgtc tacagcttcc 850
 ggttccatgt ggtgaagggtg tacaaccgcc aaactgtcca ggtgagcctg 900
 atgctgaaca cgtggcctgt catctcagcc tttgccaatg atcctgacgt 950
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 accgagtgtc tctgcgcctg cgtcggggga atctactggg tggttggaaa 1050
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 ccctcccagc cacctgctgc atctgttctt gcctgcagcc ctaggatcag 1350
 ggcaagggtt ggcaagaagg aagatctgca ctactttgcg gcctctgctc 1400
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 cagcgtaccc tgcaggcttc ttctgtgag gaaagccagc atcacggatc 1550
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 aggtcagcc acaggcagaa ggggtgggaag ggctggagt ctgtggctgg 1650
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 tgagtgtgtt tgctctggct gagagcagag ctgagagcag gtatacagag 1850
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 cattccttca gaccctctcc tgccagtatg ctaaaccctc cctctctctt 2150
 tcttatcccg ctgtcccatt ggcccagcct ggatgaatct atcaataaaa 2200
 caactagaga atgggtgtca gtgagacact atagaattac taaggagaag 2250
 atgcctctgg agtttggatc ggggtgttaca ggtacaagta ggtatgttgc 2300
 agaggaaaat aaatatcaaa ctgtatacta aaattaaaaa 2340

<210> 287

<211> 205

<212> PRT

<213> Homo sapiens

<400> 287

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Gly | Ala | Lys | Pro | His | Trp | Leu | Pro | Gly | Pro | Leu | His | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Pro | Gly | Leu | Pro | Leu | Val | Leu | Val | Leu | Leu | Ala | Leu | Gly | Ala | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Trp | Ala | Gln | Glu | Gly | Ser | Glu | Pro | Val | Leu | Leu | Glu | Gly | Glu | Cys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Val | Val | Cys | Glu | Pro | Gly | Arg | Ala | Ala | Ala | Gly | Gly | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Ala | Ala | Leu | Gly | Glu | Ala | Pro | Pro | Gly | Arg | Val | Ala | Phe | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Val | Arg | Ser | His | His | His | Glu | Pro | Ala | Gly | Glu | Thr | Gly | Asn |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Thr | Ser | Gly | Ala | Ile | Tyr | Phe | Asp | Gln | Val | Leu | Val | Asn | Glu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Gly | Gly | Phe | Asp | Arg | Ala | Ser | Gly | Ser | Phe | Val | Ala | Pro | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Arg | Gly | Val | Tyr | Ser | Phe | Arg | Phe | His | Val | Val | Lys | Val | Tyr | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Arg | Gln | Thr | Val | Gln | Val | Ser | Leu | Met | Leu | Asn | Thr | Trp | Pro | Val |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ile | Ser | Ala | Phe | Ala | Asn | Asp | Pro | Asp | Val | Thr | Arg | Glu | Ala | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Thr | Ser | Ser | Val | Leu | Leu | Pro | Leu | Asp | Pro | Gly | Asp | Arg | Val | Ser |

| | | |
|---|-----|-----|
| 170 | 175 | 180 |
| Leu Arg Leu Arg Arg Gly Asn Leu Leu Gly Gly Trp Lys Tyr Ser | | |
| 185 | 190 | 195 |
| Ser Phe Ser Gly Phe Leu Ile Phe Pro Leu | | |
| 200 | 205 | |

<210> 288
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 288
 aggcagccac cagctctgtg ctac 24

<210> 289
 <211> 27
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-27
 <223> Synthetic construct.

<400> 289
 cagagaggga agatgaggaa gccagag 27

<210> 290
 <211> 42
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-42
 <223> Synthetic construct.

<400> 290
 ctgtgctact gcccttggac cctggggacc gagtgtctct gc 42

<210> 291
 <211> 1570
 <212> DNA
 <213> Homo sapiens

<400> 291
 gctgtttctc tcgcgccacc actggccgcc ggccgcagct ccaggtgtcc 50
 tagccgccca gcctcgacgc cgtcccggga cccctgtgct ctgcgcgaag 100
 ccctggcccc gggggccggg gcatgggcca ggggcgcggg gtgaagcggc 150

<210> 292
 <211> 388
 <212> PRT
 <213> Homo sapiens

<400> 292

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Lys | Thr | Leu | Ile | Ala | Ala | Tyr | Ser | Gly | Val | Leu | Arg | Gly | Glu | 1 | 5 | 10 | 15 |
| Arg | Gln | Ala | Glu | Ala | Asp | Arg | Ser | Gln | Arg | Ser | His | Gly | Gly | Pro | 20 | 25 | 30 | |
| Ala | Leu | Ser | Arg | Glu | Gly | Ser | Gly | Arg | Trp | Gly | Thr | Gly | Ser | Ser | 35 | 40 | 45 | |
| Ile | Leu | Ser | Ala | Leu | Gln | Asp | Leu | Phe | Ser | Val | Thr | Trp | Leu | Asn | 50 | 55 | 60 | |
| Arg | Ser | Lys | Val | Glu | Lys | Gln | Leu | Gln | Val | Ile | Ser | Val | Leu | Gln | 65 | 70 | 75 | |
| Trp | Val | Leu | Ser | Phe | Leu | Val | Leu | Gly | Val | Ala | Cys | Ser | Ala | Ile | 80 | 85 | 90 | |
| Leu | Met | Tyr | Ile | Phe | Cys | Thr | Asp | Cys | Trp | Leu | Ile | Ala | Val | Leu | 95 | 100 | 105 | |
| Tyr | Phe | Thr | Trp | Leu | Val | Phe | Asp | Trp | Asn | Thr | Pro | Lys | Lys | Gly | 110 | 115 | 120 | |
| Gly | Arg | Arg | Ser | Gln | Trp | Val | Arg | Asn | Trp | Ala | Val | Trp | Arg | Tyr | 125 | 130 | 135 | |
| Phe | Arg | Asp | Tyr | Phe | Pro | Ile | Gln | Leu | Val | Lys | Thr | His | Asn | Leu | 140 | 145 | 150 | |
| Leu | Thr | Thr | Arg | Asn | Tyr | Ile | Phe | Gly | Tyr | His | Pro | His | Gly | Ile | 155 | 160 | 165 | |
| Met | Gly | Leu | Gly | Ala | Phe | Cys | Asn | Phe | Ser | Thr | Glu | Ala | Thr | Glu | 170 | 175 | 180 | |
| Val | Ser | Lys | Lys | Phe | Pro | Gly | Ile | Arg | Pro | Tyr | Leu | Ala | Thr | Leu | 185 | 190 | 195 | |
| Ala | Gly | Asn | Phe | Arg | Met | Pro | Val | Leu | Arg | Glu | Tyr | Leu | Met | Ser | 200 | 205 | 210 | |
| Gly | Gly | Ile | Cys | Pro | Val | Ser | Arg | Asp | Thr | Ile | Asp | Tyr | Leu | Leu | 215 | 220 | 225 | |
| Ser | Lys | Asn | Gly | Ser | Gly | Asn | Ala | Ile | Ile | Ile | Val | Val | Gly | Gly | 230 | 235 | 240 | |
| Ala | Ala | Glu | Ser | Leu | Ser | Ser | Met | Pro | Gly | Lys | Asn | Ala | Val | Thr | 245 | 250 | 255 | |
| Leu | Arg | Asn | Arg | Lys | Gly | Phe | Val | Lys | Leu | Ala | Leu | Arg | His | Gly | | | | |

| | | |
|-----------------|---|-----|
| 260 | 265 | 270 |
| Ala Asp Leu Val | Pro Ile Tyr Ser Phe Gly Glu Asn Glu Val Tyr | |
| 275 | 280 | 285 |
| Lys Gln Val Ile | Phe Glu Glu Gly Ser Trp Gly Arg Trp Val Gln | |
| 290 | 295 | 300 |
| Lys Lys Phe Gln | Lys Tyr Ile Gly Phe Ala Pro Cys Ile Phe His | |
| 305 | 310 | 315 |
| Gly Arg Gly Leu | Phe Ser Ser Asp Thr Trp Gly Leu Val Pro Tyr | |
| 320 | 325 | 330 |
| Ser Lys Pro Ile | Thr Thr Val Val Gly Glu Pro Ile Thr Ile Pro | |
| 335 | 340 | 345 |
| Lys Leu Glu His | Pro Thr Gln Gln Asp Ile Asp Leu Tyr His Thr | |
| 350 | 355 | 360 |
| Met Tyr Met Glu | Ala Leu Val Lys Leu Phe Asp Lys His Lys Thr | |
| 365 | 370 | 375 |
| Lys Phe Gly Leu | Pro Glu Thr Glu Val Leu Glu Val Asn | |
| 380 | 385 | |

<210> 293
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 293
 gctgacctgg ttcccatcta ctcc 24

<210> 294
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 294
 cccacagaca cccatgacac ttcc 24

<210> 295
 <211> 50
 <212> DNA
 <213> Artificial

<220>

<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 295
aagaatgaat tgtacaaagc aggtgatctt cgaggagggc tcctggggcc 50

<210> 296
<211> 3060
<212> DNA
<213> Homo sapiens

<400> 296
gggcggcggg atggggggccg ggggcggcgg gcgccgcact cgctgaggcc 50
ccgacgcagg gccggggccg gccaggggcc gaggagcgcg gcggccagag 100
cggggcccg gaggcgacgc cggggacgcc cgcgcgacga gcaggtggcg 150
gcggctgcag gcttgtccag ccggaagccc tgagggcagc tgttcccact 200
ggctctgctg accttgtgcc ttggacggct gtcttcagcg aggggccgtg 250
caccgcctcc tgagcagcgc catgggcctg ctggccttcc tgaagacca 300
gttcgtgctg cacctgctgg tcggctttgt cttcgtggtg agtggctctg 350
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cagctctacc gccgcctcaa ctgccgcctc gcctactcac tctggagcca 450
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cggaccaggc cacggtagag cgctttggga aggagcacgc agtcatcatc 550
ctcaaccaca acttcgagat cgacttcctc tgtgggtgga ccatgtgtga 600
gcgcttcgga gtgctgggga gctccaaggt cctcgctaag aaggagctgc 650
tctacgtgcc cctcatcggc tggacgtggt actttctgga gattgtgttc 700
tgcaagcgga agtgggagga ggaccgggac accgtggtcg aagggctgag 750
gcgcctgtcg gactaccccg agtacatgtg gtttctcctg tactgcgagg 800
ggacgcgctt cacggagacc aagcaccgcy ttagcatgga ggtggcggct 850
gctaaggggc ttctgtcct caagtaccac ctgctgccgc ggaccaaggg 900
cttcaccacc gcagtcaagt gcctccggg gacagtcgca gctgtctatg 950
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tgtaccagga gaaggacgcg ctccaggaga tatataatca gaaggcatg 1150

ttccagggg agcagtttaa gcctgcccg aggccgtgga ccctcctgaa 1200
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 agaaaaatta acagcctcag agacccatgg tgcaccgtca cacaatatca 1650
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 aaccttcaac tgtaattatt ggacttttga gtcttagatg gtcctgacct 2000
 ctttgtcttc agggacagtt tttcaattta atccctaata acaattagtc 2050
 aagcttctct gacctgtagg aaggcctgtc tttaggccgg gcacagtggc 2100
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 tttttgtatt ttagtagag acgtgttagc caggctggtc tcgatctcct 2400
 gacctcaagt gaccacctgc ctgagcctcc caaagtactg ggattacagg 2450
 cgtgagccac tgtgcctggc cttgagcatc ttgtgatgtg cttattggcc 2500
 atttgtatat cttctatctt ctttggggaa atgtctgttc aagtcctttg 2550
 cctttttaaa tttttattat ttatttattt atttattttg agacagggtc 2600

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<210> 297

<211> 368

<212> PRT

<213> Homo sapiens

<400> 297

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Leu | Leu | Ala | Phe | Leu | Lys | Thr | Gln | Phe | Val | Leu | His | Leu | 1 | 5 | 10 | 15 |
| Leu | Val | Gly | Phe | Val | Phe | Val | Val | Ser | Gly | Leu | Val | Ile | Asn | Phe | 20 | 25 | 30 | |
| Val | Gln | Leu | Cys | Thr | Leu | Ala | Leu | Trp | Pro | Val | Ser | Lys | Gln | Leu | 35 | 40 | 45 | |
| Tyr | Arg | Arg | Leu | Asn | Cys | Arg | Leu | Ala | Tyr | Ser | Leu | Trp | Ser | Gln | 50 | 55 | 60 | |
| Leu | Val | Met | Leu | Leu | Glu | Trp | Trp | Ser | Cys | Thr | Glu | Cys | Thr | Leu | 65 | 70 | 75 | |
| Phe | Thr | Asp | Gln | Ala | Thr | Val | Glu | Arg | Phe | Gly | Lys | Glu | His | Ala | 80 | 85 | 90 | |
| Val | Ile | Ile | Leu | Asn | His | Asn | Phe | Glu | Ile | Asp | Phe | Leu | Cys | Gly | 95 | 100 | 105 | |
| Trp | Thr | Met | Cys | Glu | Arg | Phe | Gly | Val | Leu | Gly | Ser | Ser | Lys | Val | 110 | 115 | 120 | |
| Leu | Ala | Lys | Lys | Glu | Leu | Leu | Tyr | Val | Pro | Leu | Ile | Gly | Trp | Thr | 125 | 130 | 135 | |
| Trp | Tyr | Phe | Leu | Glu | Ile | Val | Phe | Cys | Lys | Arg | Lys | Trp | Glu | Glu | 140 | 145 | 150 | |
| Asp | Arg | Asp | Thr | Val | Val | Glu | Gly | Leu | Arg | Arg | Leu | Ser | Asp | Tyr | 155 | 160 | 165 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Glu | Tyr | Met | Trp | Phe | Leu | Leu | Tyr | Cys | Glu | Gly | Thr | Arg | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Thr | Glu | Thr | Lys | His | Arg | Val | Ser | Met | Glu | Val | Ala | Ala | Ala | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Leu | Pro | Val | Leu | Lys | Tyr | His | Leu | Leu | Pro | Arg | Thr | Lys | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Phe | Thr | Thr | Ala | Val | Lys | Cys | Leu | Arg | Gly | Thr | Val | Ala | Ala | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Tyr | Asp | Val | Thr | Leu | Asn | Phe | Arg | Gly | Asn | Lys | Asn | Pro | Ser | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Gly | Ile | Leu | Tyr | Gly | Lys | Lys | Tyr | Glu | Ala | Asp | Met | Cys | Val | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Arg | Phe | Pro | Leu | Glu | Asp | Ile | Pro | Leu | Asp | Glu | Lys | Glu | Ala | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ala | Gln | Trp | Leu | His | Lys | Leu | Tyr | Gln | Glu | Lys | Asp | Ala | Leu | Gln | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Glu | Ile | Tyr | Asn | Gln | Lys | Gly | Met | Phe | Pro | Gly | Glu | Gln | Phe | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Pro | Ala | Arg | Arg | Pro | Trp | Thr | Leu | Leu | Asn | Phe | Leu | Ser | Trp | Ala | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Thr | Ile | Leu | Leu | Ser | Pro | Leu | Phe | Ser | Phe | Val | Leu | Gly | Val | Phe | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Ala | Ser | Gly | Ser | Pro | Leu | Leu | Ile | Leu | Thr | Phe | Leu | Gly | Phe | Val | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Gly | Ala | Ala | Ser | Phe | Gly | Val | Arg | Arg | Leu | Ile | Gly | Glu | Ser | Leu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Pro | Gly | Arg | Trp | Arg | Leu | Gln | | | | | | | | |
| | | | | 365 | | | | | | | | | | | |

<210> 298

<211> 24

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-24

<223> Synthetic construct.

<400> 298

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<210> 299

<211> 21

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-21

<223> Synthetic construct.

<400> 299

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<210> 300

<211> 45

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-45

<223> Synthetic construct.

<400> 300

ccaaggtcct cgctaagaag gagctgctct acgtgccct catcg 45

<210> 301

<211> 1334

<212> DNA

<213> Homo sapiens

<400> 301

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tgctctgggg cagccaccag gcatattcat ctttgtgtgt gtttttcttt 100

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tcagtttgtc ttgtgggggtt ggtggcaggc aggccggctt acgcctgata 200

cggccctggg ttagaaggga agggaagata aacttttata caaatgggga 250

tagctgggggt ctgagacctg ctctctcagt aaaattcctg ggatctgcct 300

ataccttctt ttctctaacc tggcataccc tgcttaaagc ctctcagggc 350

ttctctctgt tcttaggata aaagtattta gagctacaag agccctcatg 400

gtctggcccc tgccccctg gccagcttca ttgtacatgt ggtgttctct 450

tgctgttctt gtaatgtggt atgccatggg gtctttgcac aagcctttcc 500

tctttggctg gacactgttc cctgcccccc ccatactctt cctacttaat 550

atgtagtcat cctgcagatt tcaattctaa catcattttc tccagggatc 600

ctggcctgac agaattctcat cttgtttaat gctctcataa gaccacttgt 650

ttcccttttg cagcacttgc cactcagttg tatctttatg tgcgtttgtg 700

gttgtagtggg ttgtgtctgt tcccagaat gccagctct gagctgcgtg 750

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 ggtgctcatg ttttagagac taaatggagg aggagatgag gaaaagattg 850
 aaatctctca gttcaccaga tgggtgtaggg cccagcattg taaattcaca 900
 cgttgactgt gcttgtgaat tatctgggga tgcaggtcct gattcagtag 950
 gcccagggtt ggcatctcta acaaactccc acgtgatgct gatgctggtc 1000
 ctatgaacta tactaaatag taagaatcta tggagccagg ctgggcatgg 1050
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 acctggagtc aggatttcaa gactagcctg gccaacatgg tggaacccca 1150
 tctgtactaa aaatacacia attagctggg catggtggca catgcctgta 1200
 gtcccagcta cttgggaggg tgaagcaaga gaatcgcttg aacctgggag 1250
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<210> 302

<211> 143

<212> PRT

<213> Homo sapiens

<400> 302

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | His | Ser | Leu | Gln | Cys | Pro | Gly | Ala | Ala | Thr | Arg | His | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Cys | Val | Cys | Phe | Ser | Phe | Ala | Leu | Ala | Leu | Gly | His | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ile | Ser | Leu | Val | Gly | Lys | Gly | Leu | Ser | Leu | Ser | Cys | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gly | Gly | Arg | Gln | Ala | Gly | Leu | Arg | Leu | Ile | Arg | Pro | Trp | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Glu | Gly | Lys | Ile | Asn | Phe | Tyr | Thr | Asn | Gly | Asp | Ser | Trp |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Arg | Pro | Ala | Ser | Ser | Val | Lys | Phe | Leu | Gly | Ser | Ala | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Phe | Phe | Ser | Leu | Thr | Trp | His | Thr | Leu | Leu | Lys | Ala | Ser | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Phe | Ser | Leu | Phe | Leu | Gly | Ser | Lys | Tyr | Leu | Glu | Leu | Gln | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ser | Trp | Ser | Gly | Pro | Cys | Pro | Pro | Gly | Gln | Leu | His | Cys | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |

Cys Gly Val Leu Leu Ser Phe Leu

<210> 303
 <211> 1768
 <212> DNA
 <213> Homo sapiens

<400> 303
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 tatgctgtgg tggctagtgc tcctactcct acctacatta aaatctgttt 200
 tttgttctct tgtaactagc ctttaccttc ctaacacaga ggatctgtca 250
 ctgtggctct ggcccaaacc tgaccttcac tctggaacga gaacagaggt 300
 ttctaaccac accgtccctt cgaagccggg gacagcctca ccttgctggc 350
 ctctcgctgg agcagtgcc tcaccaactg tctcacgtct ggaggcactg 400
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 tgggccttgc cctggccgta gaagggattg acaagcccga agatttcata 500
 ggcgatggct cccactgccc aggcacagc cttgctgtag tcaatcactg 550
 ccctggggcc aggacgggcc gtggacacct gctcagaagc agtgggtgag 600
 acatcacgct gcccgcccat ctaacctttt catgtcctgc acatcacctg 650
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 ggaagggtg ccgatggcgc atgacacact cgggactcac ctctggggcc 950
 atcagacagc cgtttccgcc ccgatccacg taccagctgc tgaagggcaa 1000
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 aggcattggtg gtgtgtgcct gtatccagc tactcgggag gctgagacag 1650
 gagaattact tgaacctggg aggtgaagga ggctgagaca ggagaatcac 1700
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<210> 304

<211> 109

<212> PRT

<213> Homo sapiens

<400> 304

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Trp | Trp | Leu | Val | Leu | Leu | Leu | Leu | Pro | Thr | Leu | Lys | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Cys | Ser | Leu | Val | Thr | Ser | Leu | Tyr | Leu | Pro | Asn | Thr | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Ser | Leu | Trp | Leu | Trp | Pro | Lys | Pro | Asp | Leu | His | Ser | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Arg | Thr | Glu | Val | Ser | Thr | His | Thr | Val | Pro | Ser | Lys | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Ser | Pro | Cys | Trp | Pro | Leu | Ala | Gly | Ala | Val | Pro | Ser | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Ser | Arg | Leu | Glu | Ala | Leu | Thr | Arg | Ala | Val | Gln | Val | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Leu | Gly | Ser | Cys | Gly | Phe | Gln | Gly | Gly | Pro | Cys | Pro | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |

Arg Arg Arg Asp

<210> 305

<211> 989

<212> DNA

<213> Homo sapiens

<400> 305

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 ccgccttcgc cactggcctc ttctgggga ggcggtgccc cccatggcga 200
 ggccggcgag agcagtgcct gcttcccccc gaggacagcc gcctgtggca 250
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 cgctgcccgc ggacggggcg gtggtgacct gcgaggtgga cgcgcagccc 500
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<210> 306

<211> 262

<212> PRT

<213> Homo sapiens

<400> 306

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Gln | Pro | Val | Pro | Arg | Leu | Ser | Val | Pro | Ala | Ala | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Ser | Ala | Ala | Leu | Gly | Ala | Ala | Phe | Ala | Thr | Gly | Leu | Phe |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Arg | Arg | Cys | Pro | Pro | Trp | Arg | Gly | Arg | Arg | Glu | Gln | Cys |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Pro | Pro | Glu | Asp | Ser | Arg | Leu | Trp | Gln | Tyr | Leu | Leu | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Met | Arg | Glu | His | Pro | Ala | Leu | Arg | Ser | Leu | Arg | Leu | Leu | 65 | 70 | 75 |
| Thr | Leu | Glu | Gln | Pro | Gln | Gly | Asp | Ser | Met | Met | Thr | Cys | Glu | Gln | 80 | 85 | 90 |
| Ala | Gln | Leu | Leu | Ala | Asn | Leu | Ala | Arg | Leu | Ile | Gln | Ala | Lys | Lys | 95 | 100 | 105 |
| Ala | Leu | Asp | Leu | Gly | Thr | Phe | Thr | Gly | Tyr | Ser | Ala | Leu | Ala | Leu | 110 | 115 | 120 |
| Ala | Leu | Ala | Leu | Pro | Ala | Asp | Gly | Arg | Val | Val | Thr | Cys | Glu | Val | 125 | 130 | 135 |
| Asp | Ala | Gln | Pro | Pro | Glu | Leu | Gly | Arg | Pro | Leu | Trp | Arg | Gln | Ala | 140 | 145 | 150 |
| Glu | Ala | Glu | His | Lys | Ile | Asp | Leu | Arg | Leu | Lys | Pro | Ala | Leu | Glu | 155 | 160 | 165 |
| Thr | Leu | Asp | Glu | Leu | Leu | Ala | Ala | Gly | Glu | Ala | Gly | Thr | Phe | Asp | 170 | 175 | 180 |
| Val | Ala | Val | Val | Asp | Ala | Asp | Lys | Glu | Asn | Cys | Ser | Ala | Tyr | Tyr | 185 | 190 | 195 |
| Glu | Arg | Cys | Leu | Gln | Leu | Leu | Arg | Pro | Gly | Gly | Ile | Leu | Ala | Val | 200 | 205 | 210 |
| Leu | Arg | Val | Leu | Trp | Arg | Gly | Lys | Val | Leu | Gln | Pro | Pro | Lys | Gly | 215 | 220 | 225 |
| Asp | Val | Ala | Ala | Glu | Cys | Val | Arg | Asn | Leu | Asn | Glu | Arg | Ile | Arg | 230 | 235 | 240 |
| Arg | Asp | Val | Arg | Val | Tyr | Ile | Ser | Leu | Leu | Pro | Leu | Gly | Asp | Gly | 245 | 250 | 255 |
| Leu | Thr | Leu | Ala | Phe | Lys | Ile | | | | | | | | | 260 | | |

<210> 307

<211> 2272

<212> DNA

<213> Homo sapiens

<400> 307

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ggatggcgcc gtgaagcccc caccacaaca gtaccccatc tttttctttg 200
gcacacacga aacagccttc ctgggaccca aggacctgtt cccctacgac 250

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<210> 308

<211> 671

<212> PRT

<213> Homo sapiens

<400> 308

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | His | Ala | Phe | Lys | Pro | Gly | Asp | Leu | Val | Phe | Ala | Lys | Met |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gly | Tyr | Pro | His | Trp | Pro | Ala | Arg | Ile | Asp | Asp | Ile | Ala | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Val | Lys | Pro | Pro | Pro | Asn | Lys | Tyr | Pro | Ile | Phe | Phe | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | His | Glu | Thr | Ala | Phe | Leu | Gly | Pro | Lys | Asp | Leu | Phe | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Asp | Lys | Cys | Lys | Asp | Lys | Tyr | Gly | Lys | Pro | Asn | Lys | Arg | Lys |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Phe | Asn | Glu | Gly | Leu | Trp | Glu | Ile | Gln | Asn | Asn | Pro | His | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Tyr | Ser | Ala | Pro | Pro | Pro | Val | Ser | Ser | Ser | Asp | Ser | Glu | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Ala | Asn | Pro | Ala | Asp | Gly | Ser | Asp | Ala | Asp | Glu | Asp | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asp | Arg | Gly | Val | Met | Ala | Val | Thr | Ala | Val | Thr | Ala | Thr | Ala |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Asp | Arg | Met | Glu | Ser | Asp | Ser | Asp | Ser | Asp | Lys | Ser | Ser |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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 Val Ser Lys Arg Ala Arg Lys Ala Ser Ser Asp Leu Asp Gln Ala
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 Ser Glu Lys Thr Ser Asp Gln Asp Phe Thr Pro Glu Lys Lys Ala
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 230 235 240
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 245 250 255
 Ser Ser Ser Ser Ser Ser Ser Ser Ser Asp Ser Asp Val Ser Val
 260 265 270
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 Lys Pro Arg Gly Arg Lys Pro Lys Pro Glu Arg Pro Pro Ser Ser
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 Trp Lys Arg Arg Asp Glu Ala Arg Arg Arg Glu Leu Glu Ala Arg
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 350 355 360
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 365 370 375
 Glu Asp Asp Glu Pro Val Lys Lys Arg Gly Arg Lys Gly Arg Gly
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 Arg Gly Pro Pro Ser Ser Ser Asp Ser Glu Pro Glu Ala Glu Leu
 395 400 405
 Glu Arg Glu Ala Lys Lys Ser Ala Lys Lys Pro Gln Ser Ser Ser
 410 415 420
 Thr Glu Pro Ala Arg Lys Pro Gly Gln Lys Glu Lys Arg Val Arg
 425 430 435

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Glu | Glu | Lys | Gln | Gln | Ala | Lys | Pro | Val | Lys | Val | Glu | Arg | Thr | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Arg | Lys | Arg | Ser | Glu | Gly | Phe | Ser | Met | Asp | Arg | Lys | Val | Glu | Lys | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Lys | Lys | Glu | Pro | Ser | Val | Glu | Glu | Lys | Leu | Gln | Lys | Leu | His | Ser | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Glu | Ile | Lys | Phe | Ala | Leu | Lys | Val | Asp | Ser | Pro | Asp | Val | Lys | Arg | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Cys | Leu | Asn | Ala | Leu | Glu | Glu | Leu | Gly | Thr | Leu | Gln | Val | Thr | Ser | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Gln | Ile | Leu | Gln | Lys | Asn | Thr | Asp | Val | Val | Ala | Thr | Leu | Lys | Lys | |
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| Ile | Arg | Arg | Tyr | Lys | Ala | Asn | Lys | Asp | Val | Met | Glu | Lys | Ala | Ala | |
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| Glu | Val | Tyr | Thr | Arg | Leu | Lys | Ser | Arg | Val | Leu | Gly | Pro | Lys | Ile | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Glu | Ala | Val | Gln | Lys | Val | Asn | Lys | Ala | Gly | Met | Glu | Lys | Glu | Lys | |
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| Ala | Glu | Glu | Lys | Leu | Ala | Gly | Glu | Glu | Leu | Ala | Gly | Glu | Glu | Ala | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Pro | Gln | Glu | Lys | Ala | Glu | Asp | Lys | Pro | Ser | Thr | Asp | Leu | Ser | Ala | |
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| Pro | Val | Asn | Gly | Glu | Ala | Thr | Ser | Gln | Lys | Gly | Glu | Ser | Ala | Glu | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Asp | Lys | Glu | His | Glu | Glu | Gly | Arg | Asp | Ser | Glu | Glu | Gly | Pro | Arg | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Cys | Gly | Ser | Ser | Glu | Asp | Leu | His | Asp | Ser | Val | Arg | Glu | Gly | Pro | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Asp | Leu | Asp | Arg | Pro | Gly | Ser | Asp | Arg | Gln | Glu | Arg | Glu | Arg | Ala | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
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<211> 777

<212> PRT

<213> Homo sapiens

<400> 310

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Ala | Asn | Lys | Asp | Glu | Arg | Leu | Lys | Ala | Arg | Ser | Gln | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | His | Leu | Phe | Pro | Ala | Leu | Met | Met | Leu | Ser | Met | Thr | Met | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Pro | Val | Thr | Gly | Thr | Leu | Lys | Gln | Asn | Ile | Pro | Arg | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Leu | Thr | Tyr | Lys | Asp | Leu | Leu | Leu | Ser | Asn | Ser | Cys | Ile | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Gly | Ser | Ser | Glu | Gly | Leu | Asp | Phe | Gln | Thr | Leu | Leu | Leu |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Glu | Glu | Arg | Gly | Arg | Leu | Leu | Leu | Gly | Ala | Lys | Asp | His | Ile |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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99
100

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Phe | Leu | Leu | Ser | Leu | Val | Asp | Leu | Asn | Lys | Asn | Phe | Lys | Lys | Ile | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Tyr | Trp | Pro | Ala | Ala | Lys | Glu | Arg | Val | Glu | Leu | Cys | Lys | Leu | Ala | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Gly | Lys | Asp | Ala | Asn | Thr | Glu | Cys | Ala | Asn | Phe | Ile | Arg | Val | Leu | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Gln | Pro | Tyr | Asn | Lys | Thr | His | Ile | Tyr | Val | Cys | Gly | Thr | Gly | Ala | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Phe | His | Pro | Ile | Cys | Gly | Tyr | Ile | Asp | Leu | Gly | Val | Tyr | Lys | Glu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Asp | Ile | Ile | Phe | Lys | Leu | Asp | Thr | His | Asn | Leu | Glu | Ser | Gly | Arg | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Leu | Lys | Cys | Pro | Phe | Asp | Pro | Gln | Gln | Pro | Phe | Ala | Ser | Val | Met | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Thr | Asp | Glu | Tyr | Leu | Tyr | Ser | Gly | Thr | Ala | Ser | Asp | Phe | Leu | Gly | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Lys | Asp | Thr | Ala | Phe | Thr | Arg | Ser | Leu | Gly | Pro | Thr | His | Asp | His | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| His | Tyr | Ile | Arg | Thr | Asp | Ile | Ser | Glu | His | Tyr | Trp | Leu | Asn | Gly | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Ala | Lys | Phe | Ile | Gly | Thr | Phe | Phe | Ile | Pro | Asp | Thr | Tyr | Asn | Pro | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Asp | Asp | Asp | Lys | Ile | Tyr | Phe | Phe | Phe | Arg | Glu | Ser | Ser | Gln | Glu | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Gly | Ser | Thr | Ser | Asp | Lys | Thr | Ile | Leu | Ser | Arg | Val | Gly | Arg | Val | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Cys | Lys | Asn | Asp | Val | Gly | Gly | Gln | Arg | Ser | Leu | Ile | Asn | Lys | Trp | | | | | |
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| Thr | Thr | Phe | Leu | Lys | Ala | Arg | Leu | Ile | Cys | Ser | Ile | Pro | Gly | Ser | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Asp | Gly | Ala | Asp | Thr | Tyr | Phe | Asp | Glu | Leu | Gln | Asp | Ile | Tyr | Leu | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Leu | Pro | Thr | Arg | Asp | Glu | Arg | Asn | Pro | Val | Val | Tyr | Gly | Val | Phe | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Thr | Thr | Thr | Ser | Ser | Ile | Phe | Lys | Gly | Ser | Ala | Val | Cys | Val | Tyr | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Ser | Met | Ala | Asp | Ile | Arg | Ala | Val | Phe | Asn | Gly | Pro | Tyr | Ala | His | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Glu | Ser | Ala | Asp | His | Arg | Trp | Val | Gln | Tyr | Asp | Gly | Arg | Ile | 380 | 385 | 390 |
| Pro | Tyr | Pro | Arg | Pro | Gly | Thr | Cys | Pro | Ser | Lys | Thr | Tyr | Asp | Pro | 395 | 400 | 405 |
| Leu | Ile | Lys | Ser | Thr | Arg | Asp | Phe | Pro | Asp | Asp | Val | Ile | Ser | Phe | 410 | 415 | 420 |
| Ile | Lys | Arg | His | Ser | Val | Met | Tyr | Lys | Ser | Val | Tyr | Pro | Val | Ala | 425 | 430 | 435 |
| Gly | Gly | Pro | Thr | Phe | Lys | Arg | Ile | Asn | Val | Asp | Tyr | Arg | Leu | Thr | 440 | 445 | 450 |
| Gln | Ile | Val | Val | Asp | His | Val | Ile | Ala | Glu | Asp | Gly | Gln | Tyr | Asp | 455 | 460 | 465 |
| Val | Met | Phe | Leu | Gly | Thr | Asp | Ile | Gly | Thr | Val | Leu | Lys | Val | Val | 470 | 475 | 480 |
| Ser | Ile | Ser | Lys | Glu | Lys | Trp | Asn | Met | Glu | Glu | Val | Val | Leu | Glu | 485 | 490 | 495 |
| Glu | Leu | Gln | Ile | Phe | Lys | His | Ser | Ser | Ile | Ile | Leu | Asn | Met | Glu | 500 | 505 | 510 |
| Leu | Ser | Leu | Lys | Gln | Gln | Gln | Leu | Tyr | Ile | Gly | Ser | Arg | Asp | Gly | 515 | 520 | 525 |
| Leu | Val | Gln | Leu | Ser | Leu | His | Arg | Cys | Asp | Thr | Tyr | Gly | Lys | Ala | 530 | 535 | 540 |
| Cys | Ala | Asp | Cys | Cys | Leu | Ala | Arg | Asp | Pro | Tyr | Cys | Ala | Trp | Asp | 545 | 550 | 555 |
| Gly | Asn | Ala | Cys | Ser | Arg | Tyr | Ala | Pro | Thr | Ser | Lys | Arg | Arg | Ala | 560 | 565 | 570 |
| Arg | Arg | Gln | Asp | Val | Lys | Tyr | Gly | Asp | Pro | Ile | Thr | Gln | Cys | Trp | 575 | 580 | 585 |
| Asp | Ile | Glu | Asp | Ser | Ile | Ser | His | Glu | Thr | Ala | Asp | Glu | Lys | Val | 590 | 595 | 600 |
| Ile | Phe | Gly | Ile | Glu | Phe | Asn | Ser | Thr | Phe | Leu | Glu | Cys | Ile | Pro | 605 | 610 | 615 |
| Lys | Ser | Gln | Gln | Ala | Thr | Ile | Lys | Trp | Tyr | Ile | Gln | Arg | Ser | Gly | 620 | 625 | 630 |
| Asp | Glu | His | Arg | Glu | Glu | Leu | Lys | Pro | Asp | Glu | Arg | Ile | Ile | Lys | 635 | 640 | 645 |
| Thr | Glu | Tyr | Gly | Leu | Leu | Ile | Arg | Ser | Leu | Gln | Lys | Lys | Asp | Ser | 650 | 655 | 660 |
| Gly | Met | Tyr | Tyr | Cys | Lys | Ala | Gln | Glu | His | Thr | Phe | Ile | His | Thr | | | |

| | | | | | |
|-------------------------------------|-----|-------------------------|-----|--|-----|
| | 665 | | 670 | | 675 |
| Ile Val Lys Leu Thr Leu Asn Val Ile | | Glu Asn Glu Gln Met Glu | | | |
| | 680 | | 685 | | 690 |
| Asn Thr Gln Arg Ala Glu His Glu Glu | | Gly Gln Val Lys Asp Leu | | | |
| | 695 | | 700 | | 705 |
| Leu Ala Glu Ser Arg Leu Arg Tyr Lys | | Asp Tyr Ile Gln Ile Leu | | | |
| | 710 | | 715 | | 720 |
| Ser Ser Pro Asn Phe Ser Leu Asp Gln | | Tyr Cys Glu Gln Met Trp | | | |
| | 725 | | 730 | | 735 |
| His Arg Glu Lys Arg Arg Gln Arg Asn | | Lys Gly Gly Pro Lys Trp | | | |
| | 740 | | 745 | | 750 |
| Lys His Met Gln Glu Met Lys Lys Lys | | Arg Asn Arg Arg His His | | | |
| | 755 | | 760 | | 765 |
| Arg Asp Leu Asp Glu Leu Pro Arg Ala | | Val Ala Thr | | | |
| | 770 | | 775 | | |

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 <222> 1-24
 <223> Synthetic construct.

<400> 312
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 <212> DNA
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<211> 370

<212> PRT

<213> Homo sapiens

<400> 315

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Leu | Ala | Lys | Tyr | Gln | Ser | His | Ser | Lys | Ser | Cys | Pro | Thr |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Pro | Pro | Thr | Pro | Val | Leu | Cys | Leu | Pro | Asn | Gln | Val | Leu | 20 | 25 | 30 |
| Gln | Arg | Leu | Glu | Gln | Arg | Arg | Gln | Gln | Ala | Ser | Glu | Arg | Glu | Ala | 35 | 40 | 45 |
| Pro | Ser | Ile | Glu | Gln | Arg | Leu | Gln | Glu | Val | Arg | Glu | Ser | Ile | Arg | 50 | 55 | 60 |
| Arg | Ala | Gln | Val | Ser | Gln | Val | Lys | Gly | Ala | Ala | Arg | Leu | Ala | Leu | 65 | 70 | 75 |
| Leu | Gln | Gly | Ala | Gly | Leu | Asp | Val | Glu | Arg | Trp | Leu | Lys | Pro | Ala | 80 | 85 | 90 |
| Met | Thr | Gln | Ala | Gln | Asp | Glu | Val | Glu | Gln | Glu | Arg | Arg | Leu | Ser | 95 | 100 | 105 |
| Glu | Ala | Arg | Leu | Ser | Gln | Arg | Asp | Leu | Ser | Pro | Thr | Ala | Glu | Asp | 110 | 115 | 120 |
| Ala | Glu | Leu | Ser | Asp | Phe | Glu | Glu | Cys | Glu | Glu | Thr | Gly | Glu | Leu | 125 | 130 | 135 |
| Phe | Glu | Glu | Pro | Ala | Pro | Gln | Ala | Leu | Ala | Thr | Arg | Ala | Leu | Pro | 140 | 145 | 150 |
| Cys | Pro | Ala | His | Val | Val | Phe | Arg | Tyr | Gln | Ala | Gly | Arg | Glu | Asp | 155 | 160 | 165 |
| Glu | Leu | Thr | Ile | Thr | Glu | Gly | Glu | Trp | Leu | Glu | Val | Ile | Glu | Glu | 170 | 175 | 180 |
| Gly | Asp | Ala | Asp | Glu | Trp | Val | Lys | Ala | Arg | Asn | Gln | His | Gly | Glu | 185 | 190 | 195 |
| Val | Gly | Phe | Val | Pro | Glu | Arg | Tyr | Leu | Asn | Phe | Pro | Asp | Leu | Ser | 200 | 205 | 210 |
| Leu | Pro | Glu | Ser | Ser | Gln | Asp | Ser | Asp | Asn | Pro | Cys | Gly | Ala | Glu | 215 | 220 | 225 |
| Pro | Thr | Ala | Phe | Leu | Ala | Gln | Ala | Leu | Tyr | Ser | Tyr | Thr | Gly | Gln | 230 | 235 | 240 |
| Ser | Ala | Glu | Glu | Leu | Ser | Phe | Pro | Glu | Gly | Ala | Leu | Ile | Arg | Leu | 245 | 250 | 255 |
| Leu | Pro | Arg | Ala | Gln | Asp | Gly | Val | Asp | Asp | Gly | Phe | Trp | Arg | Gly | 260 | 265 | 270 |
| Glu | Phe | Gly | Gly | Arg | Val | Gly | Val | Phe | Pro | Ser | Leu | Leu | Val | Glu | 275 | 280 | 285 |
| Glu | Leu | Leu | Gly | Pro | Pro | Gly | Pro | Pro | Glu | Leu | Ser | Asp | Pro | Glu | 290 | 295 | 300 |
| Gln | Met | Leu | Pro | Ser | Pro | Ser | Pro | Pro | Ser | Phe | Ser | Pro | Pro | Ala | | | |

| | | |
|---|-----|-----|
| 305 | 310 | 315 |
| Pro Thr Ser Val Leu Asp Gly Pro Pro Ala Pro Val Leu Pro Gly | | |
| 320 | 325 | 330 |
| Asp Lys Ala Leu Asp Phe Pro Gly Phe Leu Asp Met Met Ala Pro | | |
| 335 | 340 | 345 |
| Arg Leu Arg Pro Met Arg Pro Pro Pro Pro Pro Pro Ala Lys Ala | | |
| 350 | 355 | 360 |
| Pro Asp Pro Gly His Pro Asp Pro Leu Thr | | |
| 365 | 370 | |

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 <211> 4407
 <212> DNA
 <213> Homo sapiens

<400> 316
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<212> PRT
<213> Homo sapiens

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35 40 45
Leu Pro Ser Ala Arg Leu Ala Ser Pro Leu Pro Arg Glu Glu Glu
50 55 60
Ile Val Phe Pro Glu Lys Leu Asn Gly Ser Val Leu Pro Gly Ser
65 70 75
Gly Ala Pro Ala Arg Leu Leu Cys Arg Leu Gln Ala Phe Gly Glu
80 85 90
Thr Leu Leu Leu Glu Leu Glu Gln Asp Ser Gly Val Gln Val Glu
95 100 105
Gly Leu Thr Val Gln Tyr Leu Gly Gln Ala Pro Glu Leu Leu Gly
110 115 120
Gly Ala Glu Pro Gly Thr Tyr Leu Thr Gly Thr Ile Asn Gly Asp
125 130 135
Pro Glu Ser Val Ala Ser Leu His Trp Asp Gly Gly Ala Leu Leu

| | | | | | |
|-------------------------------------|-----|-------------------------|-----|-----|-----|
| | 140 | | 145 | | 150 |
| Gly Val Leu Gln Tyr Arg Gly Ala Glu | 155 | Leu His Leu Gln Pro Leu | 160 | 165 | |
| Glu Gly Gly Thr Pro Asn Ser Ala Gly | 170 | Gly Pro Gly Ala His Ile | 175 | 180 | |
| Leu Arg Arg Lys Ser Pro Ala Ser Gly | 185 | Gln Gly Pro Met Cys Asn | 190 | 195 | |
| Val Lys Ala Pro Leu Gly Ser Pro Ser | 200 | Pro Arg Pro Arg Arg Ala | 205 | 210 | |
| Lys Arg Phe Ala Ser Leu Ser Arg Phe | 215 | Val Glu Thr Leu Val Val | 220 | 225 | |
| Ala Asp Asp Lys Met Ala Ala Phe His | 230 | Gly Ala Gly Leu Lys Arg | 235 | 240 | |
| Tyr Leu Leu Thr Val Met Ala Ala Ala | 245 | Ala Lys Ala Phe Lys His | 250 | 255 | |
| Pro Ser Ile Arg Asn Pro Val Ser Leu | 260 | Val Val Thr Arg Leu Val | 265 | 270 | |
| Ile Leu Gly Ser Gly Glu Glu Gly Pro | 275 | Gln Val Gly Pro Ser Ala | 280 | 285 | |
| Ala Gln Thr Leu Arg Ser Phe Cys Ala | 290 | Trp Gln Arg Gly Leu Asn | 295 | 300 | |
| Thr Pro Glu Asp Ser Gly Pro Asp His | 305 | Phe Asp Thr Ala Ile Leu | 310 | 315 | |
| Phe Thr Arg Gln Asp Leu Cys Gly Val | 320 | Ser Thr Cys Asp Thr Leu | 325 | 330 | |
| Gly Met Ala Asp Val Gly Thr Val Cys | 335 | Asp Pro Ala Arg Ser Cys | 340 | 345 | |
| Ala Ile Val Glu Asp Asp Gly Leu Gln | 350 | Ser Ala Phe Thr Ala Ala | 355 | 360 | |
| His Glu Leu Gly His Val Phe Asn Met | 365 | Leu His Asp Asn Ser Lys | 370 | 375 | |
| Pro Cys Ile Ser Leu Asn Gly Pro Leu | 380 | Ser Thr Ser Arg His Val | 385 | 390 | |
| Met Ala Pro Val Met Ala His Val Asp | 395 | Pro Glu Glu Pro Trp Ser | 400 | 405 | |
| Pro Cys Ser Ala Arg Phe Ile Thr Asp | 410 | Phe Leu Asp Asn Gly Tyr | 415 | 420 | |
| Gly His Cys Leu Leu Asp Lys Pro Glu | 425 | Ala Pro Leu His Leu Pro | 430 | 435 | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Val Thr Phe Pro | Gly Lys Asp Tyr Asp | Ala Asp Arg Gln Cys Gln | 440 | 445 | 450 |
| Leu Thr Phe Gly | Pro Asp Ser Arg His | Cys Pro Gln Leu Pro Pro | 455 | 460 | 465 |
| Pro Cys Ala Ala | Leu Trp Cys Ser Gly | His Leu Asn Gly His Ala | 470 | 475 | 480 |
| Met Cys Gln Thr | Lys His Ser Pro Trp | Ala Asp Gly Thr Pro Cys | 485 | 490 | 495 |
| Gly Pro Ala Gln | Ala Cys Met Gly Gly | Arg Cys Leu His Met Asp | 500 | 505 | 510 |
| Gln Leu Gln Asp | Phe Asn Ile Pro Gln | Ala Gly Gly Trp Gly Pro | 515 | 520 | 525 |
| Trp Gly Pro Trp | Gly Asp Cys Ser Arg | Thr Cys Gly Gly Gly Val | 530 | 535 | 540 |
| Gln Phe Ser Ser | Arg Asp Cys Thr Arg | Pro Val Pro Arg Asn Gly | 545 | 550 | 555 |
| Gly Lys Tyr Cys | Glu Gly Arg Arg Thr | Arg Phe Arg Ser Cys Asn | 560 | 565 | 570 |
| Thr Glu Asp Cys | Pro Thr Gly Ser Ala | Leu Thr Phe Arg Glu Glu | 575 | 580 | 585 |
| Gln Cys Ala Ala | Tyr Asn His Arg Thr | Asp Leu Phe Lys Ser Phe | 590 | 595 | 600 |
| Pro Gly Pro Met | Asp Trp Val Pro Arg | Tyr Thr Gly Val Ala Pro | 605 | 610 | 615 |
| Gln Asp Gln Cys | Lys Leu Thr Cys Gln | Ala Arg Ala Leu Gly Tyr | 620 | 625 | 630 |
| Tyr Tyr Val Leu | Glu Pro Arg Val Val | Asp Gly Thr Pro Cys Ser | 635 | 640 | 645 |
| Pro Asp Ser Ser | Ser Val Cys Val Gln | Gly Arg Cys Ile His Ala | 650 | 655 | 660 |
| Gly Cys Asp Arg | Ile Ile Gly Ser Lys | Lys Lys Phe Asp Lys Cys | 665 | 670 | 675 |
| Met Val Cys Gly | Gly Asp Gly Ser Gly | Cys Ser Lys Gln Ser Gly | 680 | 685 | 690 |
| Ser Phe Arg Lys | Phe Arg Tyr Gly Tyr | Asn Asn Val Val Thr Ile | 695 | 700 | 705 |
| Pro Ala Gly Ala | Thr His Ile Leu Val | Arg Gln Gln Gly Asn Pro | 710 | 715 | 720 |
| Gly His Arg Ser | Ile Tyr Leu Ala Leu | Lys Leu Pro Asp Gly Ser | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 725 | 730 | 735 |
| Tyr Ala Leu Asn Gly Glu Tyr Thr Leu | Met Pro Ser Pro Thr Asp | |
| 740 | 745 | 750 |
| Val Val Leu Pro Gly Ala Val Ser Leu | Arg Tyr Ser Gly Ala Thr | |
| 755 | 760 | 765 |
| Ala Ala Ser Glu Thr Leu Ser Gly His | Gly Pro Leu Ala Gln Pro | |
| 770 | 775 | 780 |
| Leu Thr Leu Gln Val Leu Val Ala Gly | Asn Pro Gln Asp Thr Arg | |
| 785 | 790 | 795 |
| Leu Arg Tyr Ser Phe Phe Val Pro Arg | Pro Thr Pro Ser Thr Pro | |
| 800 | 805 | 810 |
| Arg Pro Thr Pro Gln Asp Trp Leu His | Arg Arg Ala Gln Ile Leu | |
| 815 | 820 | 825 |
| Glu Ile Leu Arg Arg Arg Pro Trp Ala | Gly Arg Lys | |
| 830 | 835 | |

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 <213> Artificial

<220>
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 <223> Synthetic construct.

<400> 318
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<210> 319
 <211> 24
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 <213> Artificial

<220>
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 <222> 1-24
 <223> Synthetic construct.

<400> 319
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<210> 320
 <211> 43
 <212> DNA
 <213> Artificial

<220>
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 <222> 1-43
 <223> Synthetic construct.

<400> 320
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<210> 321
<211> 1197
<212> DNA
<213> Homo sapiens

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ttgtggactg gtgtttggta tcctggccct aactctaatt gtctgtttt 200
gggggagcaa gcacttctgg ccggagggtac ccaaaaaagc ctatgacatg 250
gagcacactt tctacagcaa tggagagaag aagaagattt acatggaaat 300
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aaccgagatt ttcttaaaaa ttccaaaatt ctggagattt gtgataacgt 600
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<210> 322

<211> 317
 <212> PRT
 <213> Homo sapiens

<400> 322

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Lys | Asn | Pro | Pro | Glu | Asn | Cys | Glu | Asp | Cys | His | Ile | Leu | 1 | 5 | 10 | 15 |
| Asn | Ala | Glu | Ala | Phe | Lys | Ser | Lys | Lys | Ile | Cys | Lys | Ser | Leu | Lys | 20 | 25 | 30 | |
| Ile | Cys | Gly | Leu | Val | Phe | Gly | Ile | Leu | Ala | Leu | Thr | Leu | Ile | Val | 35 | 40 | 45 | |
| Leu | Phe | Trp | Gly | Ser | Lys | His | Phe | Trp | Pro | Glu | Val | Pro | Lys | Lys | 50 | 55 | 60 | |
| Ala | Tyr | Asp | Met | Glu | His | Thr | Phe | Tyr | Ser | Asn | Gly | Glu | Lys | Lys | 65 | 70 | 75 | |
| Lys | Ile | Tyr | Met | Glu | Ile | Asp | Pro | Val | Thr | Arg | Thr | Glu | Ile | Phe | 80 | 85 | 90 | |
| Arg | Ser | Gly | Asn | Gly | Thr | Asp | Glu | Thr | Leu | Glu | Val | His | Asp | Phe | 95 | 100 | 105 | |
| Lys | Asn | Gly | Tyr | Thr | Gly | Ile | Tyr | Phe | Val | Gly | Leu | Gln | Lys | Cys | 110 | 115 | 120 | |
| Phe | Ile | Lys | Thr | Gln | Ile | Lys | Val | Ile | Pro | Glu | Phe | Ser | Glu | Pro | 125 | 130 | 135 | |
| Glu | Glu | Glu | Ile | Asp | Glu | Asn | Glu | Glu | Ile | Thr | Thr | Thr | Phe | Phe | 140 | 145 | 150 | |
| Glu | Gln | Ser | Val | Ile | Trp | Val | Pro | Ala | Glu | Lys | Pro | Ile | Glu | Asn | 155 | 160 | 165 | |
| Arg | Asp | Phe | Leu | Lys | Asn | Ser | Lys | Ile | Leu | Glu | Ile | Cys | Asp | Asn | 170 | 175 | 180 | |
| Val | Thr | Met | Tyr | Trp | Ile | Asn | Pro | Thr | Leu | Ile | Ser | Val | Ser | Glu | 185 | 190 | 195 | |
| Leu | Gln | Asp | Phe | Glu | Glu | Glu | Gly | Glu | Asp | Leu | His | Phe | Pro | Ala | 200 | 205 | 210 | |
| Asn | Glu | Lys | Lys | Gly | Ile | Glu | Gln | Asn | Glu | Gln | Trp | Val | Val | Pro | 215 | 220 | 225 | |
| Gln | Val | Lys | Val | Glu | Lys | Thr | Arg | His | Ala | Arg | Gln | Ala | Ser | Glu | 230 | 235 | 240 | |
| Glu | Glu | Leu | Pro | Ile | Asn | Asp | Tyr | Thr | Glu | Asn | Gly | Ile | Glu | Phe | 245 | 250 | 255 | |
| Asp | Pro | Met | Leu | Asp | Glu | Arg | Gly | Tyr | Cys | Cys | Ile | Tyr | Cys | Arg | 260 | 265 | 270 | |

Arg Gly Asn Arg Tyr Cys Arg Arg Val Cys Glu Pro Leu Leu Gly
275 280 285

Tyr Tyr Pro Tyr Pro Tyr Cys Tyr Gln Gly Gly Arg Val Ile Cys
290 295 300

Arg Val Ile Met Pro Cys Asn Trp Trp Val Ala Arg Met Leu Gly
305 310 315

Arg Val

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<211> 1174

<212> DNA

<213> Homo sapiens

<400> 323

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ggccgtgcag cttctgggct tcctgctcag cttcctgggc atggtgggca 150
cgttgatcac caccatcctg ccgcactggc ggaggacagc gcacgtgggc 200
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gtccccggcg ggactgtcaa tggaggcagg ggttcagca caaagtttac 900
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<210> 324
 <211> 239
 <212> PRT
 <213> Homo sapiens

<400> 324

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ser | Thr | Ala | Val | Gln | Leu | Leu | Gly | Phe | Leu | Leu | Ser | Phe | 1 | 5 | 10 | 15 |
| Leu | Gly | Met | Val | Gly | Thr | Leu | Ile | Thr | Thr | Ile | Leu | Pro | His | Trp | 20 | 25 | 30 | |
| Arg | Arg | Thr | Ala | His | Val | Gly | Thr | Asn | Ile | Leu | Thr | Ala | Val | Ser | 35 | 40 | 45 | |
| Tyr | Leu | Lys | Gly | Leu | Trp | Met | Glu | Cys | Val | Trp | His | Ser | Thr | Gly | 50 | 55 | 60 | |
| Ile | Tyr | Gln | Cys | Gln | Ile | Tyr | Arg | Ser | Leu | Leu | Ala | Leu | Pro | Gln | 65 | 70 | 75 | |
| Asp | Leu | Gln | Ala | Ala | Arg | Ala | Leu | Met | Val | Ile | Ser | Cys | Leu | Leu | 80 | 85 | 90 | |
| Ser | Gly | Ile | Ala | Cys | Ala | Cys | Ala | Val | Ile | Gly | Met | Lys | Cys | Thr | 95 | 100 | 105 | |
| Arg | Cys | Ala | Lys | Gly | Thr | Pro | Ala | Lys | Thr | Thr | Phe | Ala | Ile | Leu | 110 | 115 | 120 | |
| Gly | Gly | Thr | Leu | Phe | Ile | Leu | Ala | Gly | Leu | Leu | Cys | Met | Val | Ala | 125 | 130 | 135 | |
| Val | Ser | Trp | Thr | Thr | Asn | Asp | Val | Val | Gln | Asn | Phe | Tyr | Asn | Pro | 140 | 145 | 150 | |
| Leu | Leu | Pro | Ser | Gly | Met | Lys | Phe | Glu | Ile | Gly | Gln | Ala | Leu | Tyr | 155 | 160 | 165 | |
| Leu | Gly | Phe | Ile | Ser | Ser | Ser | Leu | Ser | Leu | Ile | Gly | Gly | Thr | Leu | 170 | 175 | 180 | |
| Leu | Cys | Leu | Ser | Cys | Gln | Asp | Glu | Ala | Pro | Tyr | Arg | Pro | Tyr | Gln | 185 | 190 | 195 | |
| Ala | Pro | Pro | Arg | Ala | Thr | Thr | Thr | Thr | Ala | Asn | Thr | Ala | Pro | Ala | 200 | 205 | 210 | |
| Tyr | Gln | Pro | Pro | Ala | Ala | Tyr | Lys | Asp | Asn | Arg | Ala | Pro | Ser | Val | 215 | 220 | 225 | |

Thr Ser Ala Thr His Ser Gly Tyr Arg Leu Asn Asp Tyr Val
 230 235

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 <211> 2121
 <212> DNA
 <213> Homo sapiens

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 gcatcgcggc caccgggatg gacatgtgga gcacccagga cctgtacgac 200
 aaccccgta cctccgtgtt ccagtaagaa gggctctgga ggagctgcgt 250
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 gacttcagc catgctgcag gcagtgcgag ccctgatgat cgtaggcatc 350
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 agcctggagg cttaaggcc agcactggct ttgggtccaa caccaaaaac 800
 aagaagatat acgatggagg tgcccgaca gaggacgagg tacaatctta 850
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<210> 326

<211> 261

<212> PRT

<213> Homo sapiens

<400> 326

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Thr | Thr | Thr | Cys | Gln | Val | Val | Ala | Phe | Leu | Leu | Ser | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Leu | Ala | Gly | Cys | Ile | Ala | Ala | Thr | Gly | Met | Asp | Met | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Thr | Gln | Asp | Leu | Tyr | Asp | Asn | Pro | Val | Thr | Ser | Val | Phe | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Glu | Gly | Leu | Trp | Arg | Ser | Cys | Val | Arg | Gln | Ser | Ser | Gly | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Glu | Cys | Arg | Pro | Tyr | Phe | Thr | Ile | Leu | Gly | Leu | Pro | Ala | Met |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gln | Ala | Val | Arg | Ala | Leu | Met | Ile | Val | Gly | Ile | Val | Leu | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 80 | | | | | | | | | | 85 | | | | 90 | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Ala | Ile | Gly | Leu | Leu | Val | Ser | Ile | Phe | Ala | Leu | Lys | Cys | Ile | Arg | | | |
| | | | 95 | | | | | | 100 | | | | | 105 | | | |
| Ile | Gly | Ser | Met | Glu | Asp | Ser | Ala | Lys | Ala | Asn | Met | Thr | Leu | Thr | | | |
| | | | 110 | | | | | | 115 | | | | | 120 | | | |
| Ser | Gly | Ile | Met | Phe | Ile | Val | Ser | Gly | Leu | Cys | Ala | Ile | Ala | Gly | | | |
| | | | 125 | | | | | | 130 | | | | | 135 | | | |
| Val | Ser | Val | Phe | Ala | Asn | Met | Leu | Val | Thr | Asn | Phe | Trp | Met | Ser | | | |
| | | | 140 | | | | | | 145 | | | | | 150 | | | |
| Thr | Ala | Asn | Met | Tyr | Thr | Gly | Met | Gly | Gly | Met | Val | Gln | Thr | Val | | | |
| | | | 155 | | | | | | 160 | | | | | 165 | | | |
| Gln | Thr | Arg | Tyr | Thr | Phe | Gly | Ala | Ala | Leu | Phe | Val | Gly | Trp | Val | | | |
| | | | 170 | | | | | | 175 | | | | | 180 | | | |
| Ala | Gly | Gly | Leu | Thr | Leu | Ile | Gly | Gly | Val | Met | Met | Cys | Ile | Ala | | | |
| | | | 185 | | | | | | 190 | | | | | 195 | | | |
| Cys | Arg | Gly | Leu | Ala | Pro | Glu | Glu | Thr | Asn | Tyr | Lys | Ala | Val | Ser | | | |
| | | | 200 | | | | | | 205 | | | | | 210 | | | |
| Tyr | His | Ala | Ser | Gly | His | Ser | Val | Ala | Tyr | Lys | Pro | Gly | Gly | Phe | | | |
| | | | 215 | | | | | | 220 | | | | | 225 | | | |
| Lys | Ala | Ser | Thr | Gly | Phe | Gly | Ser | Asn | Thr | Lys | Asn | Lys | Lys | Ile | | | |
| | | | 230 | | | | | | 235 | | | | | 240 | | | |
| Tyr | Asp | Gly | Gly | Ala | Arg | Thr | Glu | Asp | Glu | Val | Gln | Ser | Tyr | Pro | | | |
| | | | 245 | | | | | | 250 | | | | | 255 | | | |
| Ser | Lys | His | Asp | Tyr | Val | | | | | | | | | | | | |
| | | | 260 | | | | | | | | | | | | | | |

<210> 327
 <211> 2010
 <212> DNA
 <213> Homo sapiens

<400> 327
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 ctattaattg tttaaaaaca gcttagggat taatgtcctc catttataat 1300
 gaagattaaa atgaaggctt taatcagcat tgtaaaggaa attgaatggc 1350
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<210> 328
 <211> 225
 <212> PRT
 <213> Homo sapiens

<400> 328

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Thr | His | Ala | Leu | Glu | Ile | Ala | Gly | Leu | Phe | Leu | Gly | Gly | 1 | 5 | 10 | 15 |
| Val | Gly | Met | Val | Gly | Thr | Val | Ala | Val | Thr | Val | Met | Pro | Gln | Trp | 20 | 25 | 30 | |
| Arg | Val | Ser | Ala | Phe | Ile | Glu | Asn | Asn | Ile | Val | Val | Phe | Glu | Asn | 35 | 40 | 45 | |
| Phe | Trp | Glu | Gly | Leu | Trp | Met | Asn | Cys | Val | Arg | Gln | Ala | Asn | Ile | 50 | 55 | 60 | |
| Arg | Met | Gln | Cys | Lys | Ile | Tyr | Asp | Ser | Leu | Leu | Ala | Leu | Ser | Pro | 65 | 70 | 75 | |
| Asp | Leu | Gln | Ala | Ala | Arg | Gly | Leu | Met | Cys | Ala | Ala | Ser | Val | Met | 80 | 85 | 90 | |
| Ser | Phe | Leu | Ala | Phe | Met | Met | Ala | Ile | Leu | Gly | Met | Lys | Cys | Thr | 95 | 100 | 105 | |
| Arg | Cys | Thr | Gly | Asp | Asn | Glu | Lys | Val | Lys | Ala | His | Ile | Leu | Leu | 110 | 115 | 120 | |
| Thr | Ala | Gly | Ile | Ile | Phe | Ile | Ile | Thr | Gly | Met | Val | Val | Leu | Ile | 125 | 130 | 135 | |
| Pro | Val | Ser | Trp | Val | Ala | Asn | Ala | Ile | Ile | Arg | Asp | Phe | Tyr | Asn | 140 | 145 | 150 | |
| Ser | Ile | Val | Asn | Val | Ala | Gln | Lys | Arg | Glu | Leu | Gly | Glu | Ala | Leu | 155 | 160 | 165 | |
| Tyr | Leu | Gly | Trp | Thr | Thr | Ala | Leu | Val | Leu | Ile | Val | Gly | Gly | Ala | 170 | 175 | 180 | |
| Leu | Phe | Cys | Cys | Val | Phe | Cys | Cys | Asn | Glu | Lys | Ser | Ser | Ser | Tyr | 185 | 190 | 195 | |
| Arg | Tyr | Ser | Ile | Pro | Ser | His | Arg | Thr | Thr | Gln | Lys | Ser | Tyr | His | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gly | Lys | Lys | Ser | Pro | Ser | Val | Tyr | Ser | Arg | Ser | Gln | Tyr | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |

<210> 329
 <211> 1315
 <212> DNA
 <213> Homo sapiens

<400> 329
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 ctgggctggg tgaatggcct ggtctcctgt gccctgccca tgtggaaggt 100
 gaccgctttc atcggcaaca gcatcgtggt ggcccagggt gtgtgggagg 150
 gcctgtggat gtcctgcgtg gtgcagagca ccggccagat gcagtgcaag 200
 gtgtacgact cactgctggc gctgccacag gacctgcagg ctgcacgtgc 250
 cctctgtgtc atcgccctcc ttgtggccct gttcggcttg ctggtctacc 300
 ttgtctgggg caagtgtacc acctgtgtgg aggagaagga ttccaaggcc 350
 cgcctgggtg tcacctctgg gattgtcttt gtcattctcag gggctcctgac 400
 gctaataccc gtgtgctgga cggcgcatgc catcatccgg gacttctata 450
 accccctggg ggctgaggcc caaaagcggg agctgggggc ctccctctac 500
 ttgggctggg cggcctcagg ccttttgttg ctgggtgggg ggttgctgtg 550
 ctgcacttgc ccctoggggg ggtcccaggg cccagccat tacatggccc 600
 gctactcaac atctgcccct gccatctctc gggggccctc tgagtaccct 650
 accaagaatt acgtctgacg tggaggggaa tgggggctcc gctggcgcta 700
 gagccatcca gaagtggcag tgcccaacag ctttgggatg ggttcgtacc 750
 ttttgtttct gcctcctgct atttttcttt tgactgagga tatttaaaat 800
 tcatttgaaa actgagccaa ggtgttgact cagactctca cttaggctct 850
 gotgtttctc acccttgat gatggagcca aagaggggat gctttgagat 900
 tctggatctt gacatgccca tcttagaagc cagtcaagct atggaactaa 950
 tgcgaggagg gcttgctgtg ctggccttgc aacaagacag actgtcccca 1000
 agagttcctg ctgctgctgg gggctgggct tccctagatg tcaactggaca 1050
 gctgcccccc atcctactca ggtctctgga gtcctctctc tcacccctgg 1100
 aaaaacaaat catctgttaa caaaggactg cccacctccg gaacttctga 1150
 cctctgtttc ctccgtcctg ataagacgtc cccccccag ggccagggtcc 1200
 cagctatgta gacccccgcc cccacctcca aactgcacc cttctgccct 1250

gccccctcg tctcaccccc ttacactca catttttattc aaataaagca 1300

tgttttgtta gtgca 1315

<210> 330

<211> 220

<212> PRT

<213> Homo sapiens

<400> 330

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ala | Ser | Ala | Gly | Met | Gln | Ile | Leu | Gly | Val | Val | Leu | Thr | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Gly | Trp | Val | Asn | Gly | Leu | Val | Ser | Cys | Ala | Leu | Pro | Met | Trp | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Lys | Val | Thr | Ala | Phe | Ile | Gly | Asn | Ser | Ile | Val | Val | Ala | Gln | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Val | Trp | Glu | Gly | Leu | Trp | Met | Ser | Cys | Val | Val | Gln | Ser | Thr | Gly | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gln | Met | Gln | Cys | Lys | Val | Tyr | Asp | Ser | Leu | Leu | Ala | Leu | Pro | Gln | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Asp | Leu | Gln | Ala | Ala | Arg | Ala | Leu | Cys | Val | Ile | Ala | Leu | Leu | Val | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ala | Leu | Phe | Gly | Leu | Leu | Val | Tyr | Leu | Ala | Gly | Ala | Lys | Cys | Thr | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Thr | Cys | Val | Glu | Glu | Lys | Asp | Ser | Lys | Ala | Arg | Leu | Val | Leu | Thr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Gly | Ile | Val | Phe | Val | Ile | Ser | Gly | Val | Leu | Thr | Leu | Ile | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Val | Cys | Trp | Thr | Ala | His | Ala | Ile | Ile | Arg | Asp | Phe | Tyr | Asn | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Val | Ala | Glu | Ala | Gln | Lys | Arg | Glu | Leu | Gly | Ala | Ser | Leu | Tyr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Gly | Trp | Ala | Ala | Ser | Gly | Leu | Leu | Leu | Gly | Gly | Gly | Gly | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Cys | Cys | Thr | Cys | Pro | Ser | Gly | Gly | Ser | Gln | Gly | Pro | Ser | His | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Tyr | Met | Ala | Arg | Tyr | Ser | Thr | Ser | Ala | Pro | Ala | Ile | Ser | Arg | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Pro | Ser | Glu | Tyr | Pro | Thr | Lys | Asn | Tyr | Val | | | | | | |
| | | | | 215 | | | | | 220 | | | | | | |

<210> 331

<211> 1160

<212> DNA

<213> Homo sapiens

<400> 331

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ttctacatct tgagcatctt ctaccactcc gaattgaacc agtcttcaaa 100
gtaaaggcaa tggcatttta tcccttgcaa attgctgggc tggttcttgg 150
gttccttggc atggtgggga ctottgccac aacccttctg cctcagtgg 200
ggagtatcag cttttgttgg cagcaacatt attgtctttg agaggctctg 250
ggaagggctc tggatgaatt gcatccgaca agccagggtc cggttgcaat 300
gcaagttcta tagctccttg ttggctctcc cgctgcctt ggaaacagcc 350
cgggccctca tgtgtgtggc tgttgcctc tccttgatcg ccctgcttat 400
tggcatctgt ggcataaagc aggtccagtg cacaggctct aacgagaggg 450
ccaaagcata cttcttggga acttcaggag tcctcttcat cctgacgggt 500
atcttcgttc tgattccggt gagctggaca gccaatataa tcatcagaga 550
tttctacaac ccagccatcc acataggtca gaaacgagag ctgggagcag 600
cacttttctt tggctgggca agcgtgctg tcctcttcat tggagggggg 650
ctgctttgtg gatcttctg ctgcaacaga aagaagcaag ggtacagata 700
tccagtgcct ggctaccgtg tgccacacac agataagcga agaaatacga 750
caatgcttag taagacctcc accagttatg tctaatacct ccttttggct 800
ccaagtatgg actatggtca atgtttttta taaagtccct ctagaaactg 850
taagtatgtg aggcaggaga acttgcttta tgtctagatt tacattgata 900
cgaaagtctc aatttggtac tgggtgtagg aatgaaaatg acttacttgg 950
acattctgac ttcaggtgta ttaaatacat tgactattgt tggacccaat 1000
cgctgctcca attttcatat tctaaattca agtataacca taatcattag 1050
caagtgtaca atgatggact acttattact ttttgaccat catgtattat 1100
ctgataagaa tctaaagttg aaattgatat tctataacaa taaaacatat 1150
acctattcta 1160

<210> 332

<211> 173

<212> PRT

<213> Homo sapiens

<400> 332

Met Asn Cys Ile Arg Gln Ala Arg Val Arg Leu Gln Cys Lys Phe

| | | | |
|---|-----|-----|-----|
| 1 | 5 | 10 | 15 |
| Tyr Ser Ser Leu Leu Ala Leu Pro Pro Ala Leu Glu Thr Ala Arg | 20 | 25 | 30 |
| Ala Leu Met Cys Val Ala Val Ala Leu Ser Leu Ile Ala Leu Leu | 35 | 40 | 45 |
| Ile Gly Ile Cys Gly Met Lys Gln Val Gln Cys Thr Gly Ser Asn | 50 | 55 | 60 |
| Glu Arg Ala Lys Ala Tyr Leu Leu Gly Thr Ser Gly Val Leu Phe | 65 | 70 | 75 |
| Ile Leu Thr Gly Ile Phe Val Leu Ile Pro Val Ser Trp Thr Ala | 80 | 85 | 90 |
| Asn Ile Ile Ile Arg Asp Phe Tyr Asn Pro Ala Ile His Ile Gly | 95 | 100 | 105 |
| Gln Lys Arg Glu Leu Gly Ala Ala Leu Phe Leu Gly Trp Ala Ser | 110 | 115 | 120 |
| Ala Ala Val Leu Phe Ile Gly Gly Gly Leu Leu Cys Gly Phe Cys | 125 | 130 | 135 |
| Cys Cys Asn Arg Lys Lys Gln Gly Tyr Arg Tyr Pro Val Pro Gly | 140 | 145 | 150 |
| Tyr Arg Val Pro His Thr Asp Lys Arg Arg Asn Thr Thr Met Leu | 155 | 160 | 165 |
| Ser Lys Thr Ser Thr Ser Tyr Val | 170 | | |

<210> 333

<211> 535

<212> DNA

<213> Homo sapiens

<400> 333

agtgacaatc tcagagcagc ttctacacca cagccatttc cagcatgaag 50

atcactgggg gtctccttct gctctgtaca gtggtctatt tctgtagcag 100

ctcagaagct gctagtctgt ctccaaaaaa agtggactgc agcattttaca 150

agaagtatcc agtgggtggcc atcccctgcc ccatcacata cctaccagtt 200

tgtggttctg actacatcac ctatgggaat gaatgtcact tgtgtaccga 250

gagcttgaaa agtaatggaa gagttcagtt tcttcacgat ggaagttgct 300

aaattctcca tggacataga gagaaaggaa tgatattctc atcatcatct 350

tcatcatccc aggctctgac tgagtttctt tcagttttac tgatgttctg 400

ggtggggggac agagccagat tcagagtaat cttgactgaa tggagaaaagt 450

ttctgtgcta cccctacaaa cccatgcctc actgacagac cagcattttt 500

tttttaacac gtcaataaaa aaataatctc ccaga 535

<210> 334

<211> 85

<212> PRT

<213> Homo sapiens

<400> 334

Met Lys Ile Thr Gly Gly Leu Leu Leu Cys Thr Val Val Tyr
1 5 10 15

Phe Cys Ser Ser Ser Glu Ala Ala Ser Leu Ser Pro Lys Lys Val
20 25 30

Asp Cys Ser Ile Tyr Lys Lys Tyr Pro Val Val Ala Ile Pro Cys
35 40 45

Pro Ile Thr Tyr Leu Pro Val Cys Gly Ser Asp Tyr Ile Thr Tyr
50 55 60

Gly Asn Glu Cys His Leu Cys Thr Glu Ser Leu Lys Ser Asn Gly
65 70 75

Arg Val Gln Phe Leu His Asp Gly Ser Cys
80 85

<210> 335

<211> 742

<212> DNA

<213> Homo sapiens

<400> 335

cccgcgcccg gttctccctc gcagcacctc gaagtgcgcc cctcgccctc 50

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tggccctgac cgggctggcg ctgctcctgc tcctgtgctg gggcccaggt 150

ggcataagtg gaaataaaact caagctgatg cttcaaaaac gagaagcacc 200

tgttccaact aagactaaag tggccgttga tgagaataaa gccaaagaat 250

tccttggcag cctgaagcgc cagaagcggc agctgtggga ccggactcgg 300

cccagagtgc agcagtggta ccagcagttt ctctacatgg gctttgatga 350

agcgaaattt gaagatgaca tcacctattg gcttaacaga gatcgaaatg 400

gacatgaata ctatggcgat tactaccaac gtcactatga tgaagactct 450

gcaattggtc cccggagccc ctacggcttt aggcattggag ccagcgtcaa 500

ctacgatgac tactaaccat gacttgccac acgctgtaca agaagcaaat 550

agcgattctc ttcattgtatc tcctaatagcc ttacactact tggttttctga 600

tttgccttat ttcagcagat cttttctacc tacttttgtgt gatcaaaaaa 650
gaagagtttaa aacaacacat gtaaagcct tttgatattt catgggaatg 700
cctctcattt aaaaatagaa ataaagcatt ttgttaaaaa ga 742

<210> 336
<211> 148
<212> PRT
<213> Homo sapiens

<400> 336
Met Ala Ala Ser Pro Ala Arg Pro Ala Val Leu Ala Leu Thr Gly
1 5 10 15
Leu Ala Leu Leu Leu Leu Leu Cys Trp Gly Pro Gly Gly Ile Ser
20 25 30
Gly Asn Lys Leu Lys Leu Met Leu Gln Lys Arg Glu Ala Pro Val
35 40 45
Pro Thr Lys Thr Lys Val Ala Val Asp Glu Asn Lys Ala Lys Glu
50 55 60
Phe Leu Gly Ser Leu Lys Arg Gln Lys Arg Gln Leu Trp Asp Arg
65 70 75
Thr Arg Pro Glu Val Gln Gln Trp Tyr Gln Gln Phe Leu Tyr Met
80 85 90
Gly Phe Asp Glu Ala Lys Phe Glu Asp Asp Ile Thr Tyr Trp Leu
95 100 105
Asn Arg Asp Arg Asn Gly His Glu Tyr Tyr Gly Asp Tyr Tyr Gln
110 115 120
Arg His Tyr Asp Glu Asp Ser Ala Ile Gly Pro Arg Ser Pro Tyr
125 130 135
Gly Phe Arg His Gly Ala Ser Val Asn Tyr Asp Asp Tyr
140 145

<210> 337
<211> 1310
<212> DNA
<213> Homo sapiens

<400> 337
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agccgggcgc tcggtagcgc ggcgggcaag gcaggcgcca tgaccctgat 100
tgaaggggtg ggtgatgagg tgaccgtcct tttctcggtg cttgcctgcc 150
ttctggtgct ggcccttgcc tgggtctcaa cgcacaccgc tgagggcggg 200
gacccactgc ccagccgctc agggacccca acgcatccc agccagcgc 250

| | | | | | |
|------------|-------------|------------|------------|-------------|------|
| agccatggca | gctaccgaca | gcatgagagg | ggaggcccca | ggggcagaga | 300 |
| ccccagcct | gagacacaga | ggtcaagctg | cacagccaga | gcccagcacg | 350 |
| gggttcacag | caacaccgcc | agccccggac | tccccgcagg | agccccctgt | 400 |
| gctacggctg | aaattcctca | atgattcaga | gcagggtggc | agggcctggc | 450 |
| cccacgacac | cattggctcc | ttgaaaagga | cccagtttcc | cggccgggaa | 500 |
| cagcaggtgc | gactcatcta | ccaagggcag | ctgctaggcg | acgacacca | 550 |
| gaccctgggc | agccttcacc | tccctcccaa | ctgcgttctc | cactgccacg | 600 |
| tgtccacgag | agtcgggtccc | ccaaatcccc | cctgcccgcc | gggggtccgag | 650 |
| ccgggcccct | cggggctgga | aatcggcagc | ctgctgctgc | ccctgctgct | 700 |
| cctgctgttg | ctgctgctct | ggtactgcca | gatccagtac | cggcccttct | 750 |
| ttcccctgac | cgccactctg | ggcctggccg | gcttcaccct | gtcctcagtc | 800 |
| ctcctggcct | ttgccatgta | ccgcccgtag | tgcctccgcg | ggcgcttggc | 850 |
| agcgtcgccg | gccccctccg | accttgctcc | ccgcgccgcg | gcgggagctg | 900 |
| ctgcctgccc | aggcccgccct | ctccggcctg | cctcttcccg | ctgccctgga | 950 |
| gcccagccct | gcgccgcaga | ggactcccgg | gactggcgga | ggccccgccc | 1000 |
| tgcgaccgcc | ggggctcggg | gccacctccc | ggggctgctg | aacctcagcc | 1050 |
| cgcactggga | gtgggctcct | cggggtcggg | catctgctgt | cgctgcctcg | 1100 |
| gccccgggca | gagccggggc | gccccggggg | cccgtcttag | tgttctgccg | 1150 |
| gaggaccag | ccgcctccaa | tccctgacag | ctccttgggc | tgagttgggg | 1200 |
| acgccaggtc | ggtgggaggc | tggtgaaggg | gagcggggag | gggcagagga | 1250 |
| gttccccgga | acccgtgcag | attaaagtaa | ctgtgaagtt | ttaaaaaaaaa | 1300 |
| aaaaaaaaaa | 1310 | | | | |

<210> 338

<212> PRT

<400> 338

Ser Val Leu Ala Cys Leu Leu Val Leu Ala Leu Ala Trp Val Ser
20 25 30

Thr His Thr Ala Glu Gly Gly Asp Pro Leu Pro Gln Pro Ser Gly
35 40 45

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Pro | Thr | Pro | Ser | Gln | Pro | Ser | Ala | Ala | Met | Ala | Ala | Thr | Asp | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Ser | Met | Arg | Gly | Glu | Ala | Pro | Gly | Ala | Glu | Thr | Pro | Ser | Leu | Arg | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| His | Arg | Gly | Gln | Ala | Ala | Gln | Pro | Glu | Pro | Ser | Thr | Gly | Phe | Thr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ala | Thr | Pro | Pro | Ala | Pro | Asp | Ser | Pro | Gln | Glu | Pro | Leu | Val | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Leu | Lys | Phe | Leu | Asn | Asp | Ser | Glu | Gln | Val | Ala | Arg | Ala | Trp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Pro | His | Asp | Thr | Ile | Gly | Ser | Leu | Lys | Arg | Thr | Gln | Phe | Pro | Gly | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Arg | Glu | Gln | Gln | Val | Arg | Leu | Ile | Tyr | Gln | Gly | Gln | Leu | Leu | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asp | Asp | Thr | Gln | Thr | Leu | Gly | Ser | Leu | His | Leu | Pro | Pro | Asn | Cys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Leu | His | Cys | His | Val | Ser | Thr | Arg | Val | Gly | Pro | Pro | Asn | Pro | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Cys | Pro | Pro | Gly | Ser | Glu | Pro | Gly | Pro | Ser | Gly | Leu | Glu | Ile | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Ser | Leu | Leu | Leu | Pro | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Trp | Tyr | Cys | Gln | Ile | Gln | Tyr | Arg | Pro | Phe | Phe | Pro | Leu | Thr | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Thr | Leu | Gly | Leu | Ala | Gly | Phe | Thr | Leu | Leu | Leu | Ser | Leu | Leu | Ala | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Phe | Ala | Met | Tyr | Arg | Pro | | | | | | | | | | |
| | | | | 245 | | | | | | | | | | | |

<210> 339

<211> 849

<212> DNA

<213> Homo sapiens

<400> 339

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tgccctctcc agattcccca ggctctcaga gaagatcagc agaaagtctg 100

caagacccta agaaccatca gccctcagct gcacctcctc cctccaagg 150

atgacaaagg cgctactcat ctatttggtc agcagctttc ttgccctaaa 200

tcaggccagc ctcatcagtc gctgtgactt ggcccaggtg ctgcagctgg 250

aggacttgga tgggtttgag gggtactccc tgagtgactg gctgtgcctg 300
gcttttgtgg aaagcaagtt caacatatca aagataaatg aaaatgcgga 350
tggaagcttt gactatggcc tttccagat caacagccac tactggtgca 400
acgattataa gagttactcg gaaaaccttt gccacgtaga ctgtcaagat 450
ctgctgaatc ccaaccttct tgcaggcatc cactgcgcaa aaaggattgt 500
gtccggagca cgggggatga acaactgggt agaattggagg ttgcactgtt 550
caggccggcc actctctac tgggtgacag gatgccgcct gagatgaaac 600
aggggtgcggg tgcaccgtgg agtcattcca agactcctgt cctcactcag 650
ggattcttca tttcttcttc ctactgcctc cacttcatgt tattttcttc 700
ccttcccatt tacaactaaa actgaccaga gcccaggaa taaatgggtt 750
tcttggttc ctcttactc ccatctggac ccagtcccct gggtcctgtc 800
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<210> 340

<211> 148

<212> PRT

<213> Homo sapiens

<400> 340

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Lys | Ala | Leu | Leu | Ile | Tyr | Leu | Val | Ser | Ser | Phe | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Asn | Gln | Ala | Ser | Leu | Ile | Ser | Arg | Cys | Asp | Leu | Ala | Gln | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gln | Leu | Glu | Asp | Leu | Asp | Gly | Phe | Glu | Gly | Tyr | Ser | Leu | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Trp | Leu | Cys | Leu | Ala | Phe | Val | Glu | Ser | Lys | Phe | Asn | Ile | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ile | Asn | Glu | Asn | Ala | Asp | Gly | Ser | Phe | Asp | Tyr | Gly | Leu | Phe |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ile | Asn | Ser | His | Tyr | Trp | Cys | Asn | Asp | Tyr | Lys | Ser | Tyr | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Leu | Cys | His | Val | Asp | Cys | Gln | Asp | Leu | Leu | Asn | Pro | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ala | Gly | Ile | His | Cys | Ala | Lys | Arg | Ile | Val | Ser | Gly | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Gly | Met | Asn | Asn | Trp | Val | Glu | Trp | Arg | Leu | His | Cys | Ser | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |

Arg Pro Leu Ser Tyr Trp Leu Thr Gly Cys Arg Leu Arg

<210> 341
<211> 23
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-23
<223> Synthetic construct.

<400> 341
ccctccaagg atgacaaagg cgc 23

<210> 342
<211> 29
<212> DNA
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<220>
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<223> Synthetic construct.

<400> 342
ggtcagcagc tttcttgccc taaatcagg 29

<210> 343
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 343
atctcaggcg gcacacctgac agcc 24

<210> 344
<211> 24
<212> DNA
<213> Artificial

<220>
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<222> 1-24
<223> Synthetic construct.

<400> 344
gtggatgcct gcaagaagg tggg 24

<210> 345
<211> 45
<212> DNA
<213> Artificial

<220>
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<222> 1-45
<223> Synthetic construct.

<400> 345
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<210> 346
<211> 2575
<212> DNA
<213> Homo sapiens

<400> 346
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actgagaacc caccagctca tcccagacac ctcatagcaa cctatttata 100
caaaggggga aagaaacacc tgagcagaat ggaatcatta tttttttccc 150
aaggagaaaa ccgggggtaaa gggaggggaag caattcaatt tgaagtcctt 200
gtgaatgggc ttccagaagg caattaaaga aatccactca gagaggactt 250
ggggtgaaac ttgggtcctg tggttttctg attgtaagtg gaagcaggtc 300
ttgcacacgc tgttggaaca tgtcaggacc aggttaagtg actggcagaa 350
aaacttccag gtggaacaag caacccatgt tctgctgcaa gcttgaagga 400
gcctggagcg ggagaaagct aacttgaaca tgacctgttg catttgga 450
gttctagcaa catgctccta aggaagcgat acaggcacag accatgcaga 500
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 gggttgtcgg acattccact ggtttctggc taatgtctac cctgagctgt 1950
 acccatctga acccaggccc agtttctctg gaaagctcca caacactgga 2000
 cttgggctct gtgcagactg ccaggcagaa ggggacatcc tgggctgtcc 2050
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tatttcattg actgctggct gctta 2575

<210> 347

<211> 639

<212> PRT

<213> Homo sapiens

<400> 347

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Arg | Lys | Arg | Tyr | Arg | His | Arg | Pro | Cys | Arg | Leu | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Phe | Leu | Leu | Leu | Leu | Leu | Met | Leu | Gly | Cys | Val | Leu | Met | Met | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Met | Leu | His | Pro | Pro | His | His | Thr | Leu | His | Gln | Thr | Val | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Gln | Ala | Ser | Lys | His | Ser | Pro | Glu | Ala | Arg | Tyr | Arg | Leu | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Phe | Gly | Glu | Ser | Gln | Asp | Trp | Val | Leu | Glu | Ala | Glu | Asp | Glu | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Glu | Tyr | Ser | Pro | Leu | Glu | Gly | Leu | Pro | Pro | Phe | Ile | Ser | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Glu | Asp | Gln | Leu | Leu | Val | Ala | Val | Ala | Leu | Pro | Gln | Ala | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Asn | Gln | Ser | Gln | Gly | Arg | Arg | Gly | Gly | Ser | Tyr | Arg | Leu | Ile |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Lys | Gln | Pro | Arg | Arg | Gln | Asp | Lys | Glu | Ala | Pro | Lys | Arg | Asp | Trp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Ala | Asp | Glu | Asp | Gly | Glu | Val | Ser | Glu | Glu | Glu | Glu | Leu | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Phe | Ser | Leu | Asp | Pro | Arg | Gly | Leu | Gln | Glu | Ala | Leu | Ser | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Arg | Ile | Pro | Leu | Gln | Arg | Ala | Leu | Pro | Glu | Val | Arg | His | Pro | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Cys | Leu | Gln | Gln | His | Pro | Gln | Asp | Ser | Leu | Pro | Thr | Ala | Ser | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ile | Leu | Cys | Phe | His | Asp | Glu | Ala | Trp | Ser | Thr | Leu | Leu | Arg | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | His | Ser | Ile | Leu | Asp | Thr | Val | Pro | Arg | Ala | Phe | Leu | Lys | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ile | Ile | Leu | Val | Asp | Asp | Leu | Ser | Gln | Gln | Gly | Gln | Leu | Lys | Ser |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Leu | Ser | Glu | Tyr | Val | Ala | Arg | Leu | Glu | Gly | Val | Lys | Leu | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |

| | | |
|-----------------|---------------------|-------------------------|
| Arg Ser Asn Lys | Arg Leu Gly Ala Ile | Arg Ala Arg Met Leu Gly |
| 260 | 265 | 270 |
| Ala Thr Arg Ala | Thr Gly Asp Val Leu | Val Phe Met Asp Ala His |
| 275 | 280 | 285 |
| Cys Glu Cys His | Pro Gly Trp Leu Glu | Pro Leu Leu Ser Arg Ile |
| 290 | 295 | 300 |
| Ala Gly Asp Arg | Ser Arg Val Val Ser | Pro Val Ile Asp Val Ile |
| 305 | 310 | 315 |
| Asp Trp Lys Thr | Phe Gln Tyr Tyr Pro | Ser Lys Asp Leu Gln Arg |
| 320 | 325 | 330 |
| Gly Val Leu Asp | Trp Lys Leu Asp Phe | His Trp Glu Pro Leu Pro |
| 335 | 340 | 345 |
| Glu His Val Arg | Lys Ala Leu Gln Ser | Pro Ile Ser Pro Ile Arg |
| 350 | 355 | 360 |
| Ser Pro Val Val | Pro Gly Glu Val Val | Ala Met Asp Arg His Tyr |
| 365 | 370 | 375 |
| Phe Gln Asn Thr | Gly Ala Tyr Asp Ser | Leu Met Ser Leu Arg Gly |
| 380 | 385 | 390 |
| Gly Glu Asn Leu | Glu Leu Ser Phe Lys | Ala Trp Leu Cys Gly Gly |
| 395 | 400 | 405 |
| Ser Val Glu Ile | Leu Pro Cys Ser Arg | Val Gly His Ile Tyr Gln |
| 410 | 415 | 420 |
| Asn Gln Asp Ser | His Ser Pro Leu Asp | Gln Glu Ala Thr Leu Arg |
| 425 | 430 | 435 |
| Asn Arg Val Arg | Ile Ala Glu Thr Trp | Leu Gly Ser Phe Lys Glu |
| 440 | 445 | 450 |
| Thr Phe Tyr Lys | His Ser Pro Glu Ala | Phe Ser Leu Ser Lys Ala |
| 455 | 460 | 465 |
| Glu Lys Pro Asp | Cys Met Glu Arg Leu | Gln Leu Gln Arg Arg Leu |
| 470 | 475 | 480 |
| Gly Cys Arg Thr | Phe His Trp Phe Leu | Ala Asn Val Tyr Pro Glu |
| 485 | 490 | 495 |
| Leu Tyr Pro Ser | Glu Pro Arg Pro Ser | Phe Ser Gly Lys Leu His |
| 500 | 505 | 510 |
| Asn Thr Gly Leu | Gly Leu Cys Ala Asp | Cys Gln Ala Glu Gly Asp |
| 515 | 520 | 525 |
| Ile Leu Gly Cys | Pro Met Val Leu Ala | Pro Cys Ser Asp Ser Arg |
| 530 | 535 | 540 |
| Gln Gln Gln Tyr | Leu Gln His Thr Ser | Arg Lys Glu Ile His Phe |

| | | |
|---|-----|-----|
| 545 | 550 | 555 |
| Gly Ser Pro Gln His Leu Cys Phe Ala Val Arg Gln Glu Gln Val | | |
| 560 | 565 | 570 |
| Ile Leu Gln Asn Cys Thr Glu Glu Gly Leu Ala Ile His Gln Gln | | |
| 575 | 580 | 585 |
| His Trp Asp Phe Gln Glu Asn Gly Met Ile Val His Ile Leu Ser | | |
| 590 | 595 | 600 |
| Gly Lys Cys Met Glu Ala Val Val Gln Glu Asn Asn Lys Asp Leu | | |
| 605 | 610 | 615 |
| Tyr Leu Arg Pro Cys Asp Gly Lys Ala Arg Gln Gln Trp Arg Phe | | |
| 620 | 625 | 630 |
| Asp Gln Ile Asn Ala Val Asp Glu Arg | | |
| 635 | | |

<210> 348
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 348
 ggagaggtgg tggccatgga cag 23

<210> 349
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 349
 ctgtcactgc aaggagccaa cacc 24

<210> 350
 <211> 45
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-45
 <223> Synthetic construct.

<400> 350
 tatgtcgctg cgaggtggtg aaaacctcga actgtctttc aaggc 45

<210> 351
<211> 2524
<212> DNA
<213> Homo sapiens

<400> 351
cgccaagcat gcagtaaagg ctgaaaatct gggtcacagc tgaggaagac 50
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tccctctctg gccactgctg ttgctgcccc tcccaccgcc tgctcagggc 150
tcttcatcct cccctcgaac cccaccagcc ccagcccgcc ccccggtgtgc 200
caggggaggg ccctcggccc cacgtcatgt gtgcgtgtgg gagcgagcac 250
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 tcaaataaag cctttgcaag ataa 2524

<210> 352

<211> 243

<212> PRT

<213> Homo sapiens

<400> 352

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Pro | Gln | Gly | Pro | Ala | Ala | Ser | Pro | Gln | Arg | Leu | Arg | Gly |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Leu | Leu | Leu | Leu | Leu | Leu | Gln | Leu | Pro | Ala | Pro | Ser | Ser | Ala | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ser | Glu | Ile | Pro | Lys | Gly | Lys | Gln | Lys | Ala | Gln | Leu | Arg | Gln | Arg | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Glu | Val | Val | Asp | Leu | Tyr | Asn | Gly | Met | Cys | Leu | Gln | Gly | Pro | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gly | Val | Pro | Gly | Arg | Asp | Gly | Ser | Pro | Gly | Ala | Asn | Val | Ile | Pro | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Gly | Thr | Pro | Gly | Ile | Pro | Gly | Arg | Asp | Gly | Phe | Lys | Gly | Glu | Lys | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Gly | Glu | Cys | Leu | Arg | Glu | Ser | Phe | Glu | Glu | Ser | Trp | Thr | Pro | Asn | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Tyr | Lys | Gln | Cys | Ser | Trp | Ser | Ser | Leu | Asn | Tyr | Gly | Ile | Asp | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Lys | Ile | Ala | Glu | Cys | Thr | Phe | Thr | Lys | Met | Arg | Ser | Asn | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ala | Leu | Arg | Val | Leu | Phe | Ser | Gly | Ser | Leu | Arg | Leu | Lys | Cys | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asn | Ala | Cys | Cys | Gln | Arg | Trp | Tyr | Phe | Thr | Phe | Asn | Gly | Ala | Glu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Cys | Ser | Gly | Pro | Leu | Pro | Ile | Glu | Ala | Ile | Ile | Tyr | Leu | Asp | Gln | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Ser | Pro | Glu | Met | Asn | Ser | Thr | Ile | Asn | Ile | His | Arg | Thr | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Val | Glu | Gly | Leu | Cys | Glu | Gly | Ile | Gly | Ala | Gly | Leu | Val | Asp | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Val | Ala | Ile | Trp | Val | Gly | Thr | Cys | Ser | Asp | Tyr | Pro | Lys | Gly | Asp | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Ser | Thr | Gly | Trp | Asn | Ser | Val | Ser | Arg | Ile | Ile | Ile | Glu | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |

Leu Pro Lys

<210> 353

<211> 480

<212> DNA

<213> Homo sapiens

<400> 353

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cggccaggat ggcacacctgt ctggccctgc gcatggcgct gctgctggtc 100

tccgggggttc tggcccctgc ggtgctcaca gacgatgttc cacaggagcc 150
 cgtgcccacg ctgtggaacg agccggccga gctgccgtcg ggagaaggcc 200
 ccgtggagag caccagcccc ggccgggagc ccgtggacac cggcccccca 250
 gccccaccg tcgcgccagg acccgaggac agcaccgcgc aggagcggct 300
 ggaccagggc ggcgggtcgc tggggcccgg cgctatcgcg gccatcgtga 350
 tcgccgccct gctggccacc tgcgtggtgc tggcgctcgt ggtcgtcgcg 400
 ctgagaaagt tttctgcctc ctgaagcgaa taaaggggcc gcgcccggcc 450
 gcggcgcgac tcggcaaaaa aaaaaaaaaa 480

<210> 354
 <211> 121
 <212> PRT
 <213> Homo sapiens

<400> 354
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 20 25 30
 Pro Val Pro Thr Leu Trp Asn Glu Pro Ala Glu Leu Pro Ser Gly
 35 40 45
 Glu Gly Pro Val Glu Ser Thr Ser Pro Gly Arg Glu Pro Val Asp
 50 55 60
 Thr Gly Pro Pro Ala Pro Thr Val Ala Pro Gly Pro Glu Asp Ser
 65 70 75
 Thr Ala Gln Glu Arg Leu Asp Gln Gly Gly Gly Ser Leu Gly Pro
 80 85 90
 Gly Ala Ile Ala Ala Ile Val Ile Ala Ala Leu Leu Ala Thr Cys
 95 100 105
 Val Val Leu Ala Leu Val Val Val Ala Leu Arg Lys Phe Ser Ala
 110 115 120
 Ser

<210> 355
 <211> 2134
 <212> DNA
 <213> Homo sapiens

<400> 355
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 gttggccggc ggcgggccgg gacgggcatg gccctgctgc tgtgcctggt 100

gtgcctgacg gcggcgctgg cccacggctg tctgcaactg cacagcaact 150
 tctccaagaa gttctccttc taccgccacc atgtgaactt caagtcctgg 200
 tgggtgggcg acatccccgt gtcagggcg ctgctcaccg actggagcga 250
 cgacacgatg aaggagctgc acctggccat ccccgccaag atcaccggg 300
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<210> 356

<211> 157

<212> PRT

<213> Homo sapiens

<400> 356

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Leu | Leu | Leu | Cys | Leu | Val | Cys | Leu | Thr | Ala | Ala | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Gly | Cys | Leu | His | Cys | His | Ser | Asn | Phe | Ser | Lys | Lys | Phe | Ser |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Tyr | Arg | His | His | Val | Asn | Phe | Lys | Ser | Trp | Trp | Val | Gly | Asp |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Val | Ser | Gly | Ala | Leu | Leu | Thr | Asp | Trp | Ser | Asp | Asp | Thr |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Glu | Leu | His | Leu | Ala | Ile | Pro | Ala | Lys | Ile | Thr | Arg | Glu |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Leu | Asp | Gln | Val | Ala | Thr | Ala | Val | Tyr | Gln | Met | Met | Asp | Gln |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Tyr | Gln | Gly | Lys | Met | Tyr | Phe | Pro | Gly | Tyr | Phe | Pro | Asn | Glu |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Asn | Ile | Phe | Arg | Glu | Gln | Val | His | Leu | Ile | Gln | Asn | Ala |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ile | Glu | Arg | His | Leu | Ala | Pro | Gly | Ser | Trp | Gly | Gly | Gly | Gln |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Arg | Glu | Gly | Pro | Ser | Leu | Ala | Pro | Glu | Gly | Ser | Met | Pro |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

140

145

150

Ser Pro Arg Gly Asp Leu Pro
155

<210> 357

<211> 1536

<212> DNA

<213> Homo sapiens

<400> 357

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acagatgtcc cagctgccat ggaattcatt gctgccactg aggtggctgt 200
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<210> 358
 <211> 273
 <212> PRT
 <213> Homo sapiens

<400> 358

| | | | | | | | | | | | | | | | | | | |
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| Met | Glu | Ala | Ala | Pro | Ser | Arg | Phe | Met | Phe | Leu | Leu | Phe | Leu | Leu | 1 | 5 | 10 | 15 |
| Thr | Cys | Glu | Leu | Ala | Ala | Glu | Val | Ala | Ala | Glu | Val | Glu | Lys | Ser | 20 | 25 | 30 | |
| Ser | Asp | Gly | Pro | Gly | Ala | Ala | Gln | Glu | Pro | Thr | Trp | Leu | Thr | Asp | 35 | 40 | 45 | |
| Val | Pro | Ala | Ala | Met | Glu | Phe | Ile | Ala | Ala | Thr | Glu | Val | Ala | Val | 50 | 55 | 60 | |
| Ile | Gly | Phe | Phe | Gln | Asp | Leu | Glu | Ile | Pro | Ala | Val | Pro | Ile | Leu | 65 | 70 | 75 | |
| His | Ser | Met | Val | Gln | Lys | Phe | Pro | Gly | Val | Ser | Phe | Gly | Ile | Ser | 80 | 85 | 90 | |
| Thr | Asp | Ser | Glu | Val | Leu | Thr | His | Tyr | Asn | Ile | Thr | Gly | Asn | Thr | 95 | 100 | 105 | |
| Ile | Cys | Leu | Phe | Arg | Leu | Val | Asp | Asn | Glu | Gln | Leu | Asn | Leu | Glu | 110 | 115 | 120 | |
| Asp | Glu | Asp | Ile | Glu | Ser | Ile | Asp | Ala | Thr | Lys | Leu | Ser | Arg | Phe | 125 | 130 | 135 | |
| Ile | Glu | Ile | Asn | Ser | Leu | His | Met | Val | Thr | Glu | Tyr | Asn | Pro | Val | 140 | 145 | 150 | |
| Thr | Val | Ile | Gly | Leu | Phe | Asn | Ser | Val | Ile | Gln | Ile | His | Leu | Leu | 155 | 160 | 165 | |
| Leu | Ile | Met | Asn | Lys | Ala | Ser | Pro | Glu | Tyr | Glu | Glu | Asn | Met | His | 170 | 175 | 180 | |
| Arg | Tyr | Gln | Lys | Ala | Ala | Lys | Leu | Phe | Gln | Gly | Lys | Ile | Leu | Phe | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Val | Asp | Ser | Gly | Met | Lys | Glu | Asn | Gly | Lys | Val | Ile | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| | | | | | | | | | | | | | | |
| Phe | Phe | Lys | Leu | Lys | Glu | Ser | Gln | Leu | Pro | Ala | Leu | Ala | Ile | Tyr |
| | | | | 215 | | | | | 220 | | | | | 225 |
| | | | | | | | | | | | | | | |
| Gln | Thr | Leu | Asp | Asp | Glu | Trp | Asp | Thr | Leu | Pro | Thr | Ala | Glu | Val |
| | | | | 230 | | | | | 235 | | | | | 240 |
| | | | | | | | | | | | | | | |
| Ser | Val | Glu | His | Val | Gln | Asn | Phe | Cys | Asp | Gly | Phe | Leu | Ser | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| | | | | | | | | | | | | | | |
| Lys | Leu | Leu | Lys | Glu | Asn | Arg | Glu | Ser | Glu | Gly | Lys | Thr | Pro | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |

Val Glu Leu

<210> 359
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 359
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<210> 360
 <211> 20
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-20
 <223> Synthetic construct.

<400> 360
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<210> 361
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 361
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<210> 362

<211> 50
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-50
<223> Synthetic construct.

<400> 362
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<210> 363
<211> 1777
<212> DNA
<213> Homo sapiens

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 <211> 269
 <212> PRT
 <213> Homo sapiens

<400> 364
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 35 40 45
 Ile Phe Val Ala Asn Gly Thr Gln Gly Lys Leu Thr Cys Lys Phe
 50 55 60
 Lys Ser Thr Ser Thr Thr Gly Gly Leu Thr Ser Val Ser Trp Ser
 65 70 75
 Phe Gln Pro Glu Gly Ala Asp Thr Thr Val Ser Phe Phe His Tyr
 80 85 90
 Ser Gln Gly Gln Val Tyr Leu Gly Asn Tyr Pro Pro Phe Lys Asp
 95 100 105

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Ser | Trp | Ala | Gly | Asp | Leu | Asp | Lys | Lys | Asp | Ala | Ser | Ile | 110 | 115 | 120 |
| Asn | Ile | Glu | Asn | Met | Gln | Phe | Ile | His | Asn | Gly | Thr | Tyr | Ile | Cys | 125 | 130 | 135 |
| Asp | Val | Lys | Asn | Pro | Pro | Asp | Ile | Val | Val | Gln | Pro | Gly | His | Ile | 140 | 145 | 150 |
| Arg | Leu | Tyr | Val | Val | Glu | Lys | Glu | Asn | Leu | Pro | Val | Phe | Pro | Val | 155 | 160 | 165 |
| Trp | Val | Val | Val | Gly | Ile | Val | Thr | Ala | Val | Val | Leu | Gly | Leu | Thr | 170 | 175 | 180 |
| Leu | Leu | Ile | Ser | Met | Ile | Leu | Ala | Val | Leu | Tyr | Arg | Arg | Lys | Asn | 185 | 190 | 195 |
| Ser | Lys | Arg | Asp | Tyr | Thr | Gly | Cys | Ser | Thr | Ser | Glu | Ser | Leu | Ser | 200 | 205 | 210 |
| Pro | Val | Lys | Gln | Ala | Pro | Arg | Lys | Ser | Pro | Ser | Asp | Thr | Glu | Gly | 215 | 220 | 225 |
| Leu | Val | Lys | Ser | Leu | Pro | Ser | Gly | Ser | His | Gln | Gly | Pro | Val | Ile | 230 | 235 | 240 |
| Tyr | Ala | Gln | Leu | Asp | His | Ser | Gly | Gly | His | His | Ser | Asp | Lys | Ile | 245 | 250 | 255 |
| Asn | Lys | Ser | Glu | Ser | Val | Val | Tyr | Ala | Asp | Ile | Arg | Lys | Asn | | 260 | 265 | |

<210> 365

<211> 1321

<212> DNA

<213> Homo sapiens

<400> 365

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tcgggctggg gctgggggctg gcgctcgggg tgaagctggc aggtgggctg 200
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<210> 366

<211> 373

<212> PRT

<213> Homo sapiens

<400> 366

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | Arg | Leu | Leu | Ser | Ala | Val | Thr | Ala | Arg | Ala | Ala | Ala | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Leu | Ala | Ser | Ser | Cys | Gly | Arg | Arg | Gly | Val | His | Gln | Arg |
| | | | | 20 | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Leu | Pro | Pro | Leu | Gly | His | Gly | Trp | Val | Gly | Gly | Leu | Gly |
| | | | | 35 | | | | 40 | | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Leu | Gly | Leu | Ala | Leu | Gly | Val | Lys | Leu | Ala | Gly | Gly | Leu |
| | | | | 50 | | | | 55 | | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Gly | Ala | Ala | Pro | Ala | Gln | Ser | Pro | Ala | Ala | Pro | Asp | Pro | Glu |
| | | | | 65 | | | | 70 | | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Pro | Leu | Ala | Glu | Pro | Pro | Gln | Glu | Gln | Ser | Leu | Ala | Pro |
| | | | | 80 | | | | 85 | | | | | | 90 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Ser | Pro | Gln | Thr | Pro | Ala | Pro | Pro | Cys | Ser | Arg | Cys | Phe | Ala | 95 | 100 | 105 |
| Arg | Ala | Ile | Glu | Ser | Ser | Arg | Asp | Leu | Leu | His | Arg | Ile | Lys | Asp | 110 | 115 | 120 |
| Glu | Val | Gly | Ala | Pro | Gly | Ile | Val | Val | Gly | Val | Ser | Val | Asp | Gly | 125 | 130 | 135 |
| Lys | Glu | Val | Trp | Ser | Glu | Gly | Leu | Gly | Tyr | Ala | Asp | Val | Glu | Asn | 140 | 145 | 150 |
| Arg | Val | Pro | Cys | Lys | Pro | Glu | Thr | Val | Met | Arg | Ile | Ala | Ser | Ile | 155 | 160 | 165 |
| Ser | Lys | Ser | Leu | Thr | Met | Val | Ala | Leu | Ala | Lys | Leu | Trp | Glu | Ala | 170 | 175 | 180 |
| Gly | Lys | Leu | Asp | Leu | Asp | Ile | Pro | Val | Gln | His | Tyr | Val | Pro | Glu | 185 | 190 | 195 |
| Phe | Pro | Glu | Lys | Glu | Tyr | Glu | Gly | Glu | Lys | Val | Ser | Val | Thr | Thr | 200 | 205 | 210 |
| Arg | Leu | Leu | Ile | Ser | His | Leu | Ser | Gly | Ile | Arg | His | Tyr | Glu | Lys | 215 | 220 | 225 |
| Asp | Ile | Lys | Lys | Val | Lys | Glu | Glu | Lys | Ala | Tyr | Lys | Ala | Leu | Lys | 230 | 235 | 240 |
| Met | Met | Lys | Glu | Asn | Val | Ala | Phe | Glu | Gln | Glu | Lys | Glu | Gly | Lys | 245 | 250 | 255 |
| Ser | Asn | Glu | Lys | Asn | Asp | Phe | Thr | Lys | Phe | Lys | Thr | Glu | Gln | Glu | 260 | 265 | 270 |
| Asn | Glu | Ala | Lys | Cys | Arg | Asn | Ser | Lys | Pro | Gly | Lys | Lys | Lys | Asn | 275 | 280 | 285 |
| Asp | Phe | Glu | Gln | Gly | Glu | Leu | Tyr | Leu | Arg | Glu | Lys | Phe | Glu | Asn | 290 | 295 | 300 |
| Ser | Ile | Glu | Ser | Leu | Arg | Leu | Phe | Lys | Asn | Asp | Pro | Leu | Phe | Phe | 305 | 310 | 315 |
| Lys | Pro | Gly | Ser | Gln | Phe | Leu | Tyr | Ser | Thr | Phe | Gly | Tyr | Thr | Leu | 320 | 325 | 330 |
| Leu | Ala | Ala | Ile | Val | Glu | Arg | Ala | Ser | Gly | Cys | Lys | Tyr | Leu | Asp | 335 | 340 | 345 |
| Tyr | Met | Gln | Lys | Ile | Phe | His | Asp | Leu | Asp | Met | Leu | Thr | Thr | Val | 350 | 355 | 360 |
| Gln | Glu | Glu | Asn | Glu | Pro | Val | Ile | Tyr | Asn | Arg | Ala | Arg | | | 365 | 370 | |

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<222> 1-28
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<400> 371
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<211> 269

<212> PRT

<213> Homo sapiens

<400> 372

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Ala | Ser | Ala | Gly | Ala | Thr | Arg | Leu | Leu | Leu | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Met | Ala | Val | Ala | Ala | Pro | Ser | Arg | Ala | Arg | Gly | Ser | Gly | Cys |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Gly | Thr | Gly | Ala | Arg | Gly | Ala | Gly | Ala | Glu | Gly | Arg | Glu |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Ala | Cys | Gly | Thr | Val | Gly | Leu | Leu | Leu | Glu | His | Ser | Phe | 50 | 55 | 60 |
| Glu | Ile | Asp | Asp | Ser | Ala | Asn | Phe | Arg | Lys | Arg | Gly | Ser | Leu | Leu | 65 | 70 | 75 |
| Trp | Asn | Gln | Gln | Asp | Gly | Thr | Leu | Ser | Leu | Ser | Gln | Arg | Gln | Leu | 80 | 85 | 90 |
| Ser | Glu | Glu | Glu | Arg | Gly | Arg | Leu | Arg | Asp | Val | Ala | Ala | Leu | Asn | 95 | 100 | 105 |
| Gly | Leu | Tyr | Arg | Val | Arg | Ile | Pro | Arg | Arg | Pro | Gly | Ala | Leu | Asp | 110 | 115 | 120 |
| Gly | Leu | Glu | Ala | Gly | Gly | Tyr | Val | Ser | Ser | Phe | Val | Pro | Ala | Cys | 125 | 130 | 135 |
| Ser | Leu | Val | Glu | Ser | His | Leu | Ser | Asp | Gln | Leu | Thr | Leu | His | Val | 140 | 145 | 150 |
| Asp | Val | Ala | Gly | Asn | Val | Val | Gly | Val | Ser | Val | Val | Thr | His | Pro | 155 | 160 | 165 |
| Gly | Gly | Cys | Arg | Gly | His | Glu | Val | Glu | Asp | Val | Asp | Leu | Glu | Leu | 170 | 175 | 180 |
| Phe | Asn | Thr | Ser | Val | Gln | Leu | Gln | Pro | Pro | Thr | Thr | Ala | Pro | Gly | 185 | 190 | 195 |
| Pro | Glu | Thr | Ala | Ala | Phe | Ile | Glu | Arg | Leu | Glu | Met | Glu | Gln | Ala | 200 | 205 | 210 |
| Gln | Lys | Ala | Lys | Asn | Pro | Gln | Glu | Gln | Lys | Ser | Phe | Phe | Ala | Lys | 215 | 220 | 225 |
| Tyr | Trp | Met | Tyr | Ile | Ile | Pro | Val | Val | Leu | Phe | Leu | Met | Met | Ser | 230 | 235 | 240 |
| Gly | Ala | Pro | Asp | Thr | Gly | Gly | Gln | Gly | Gly | Gly | Gly | Gly | Gly | Gly | 245 | 250 | 255 |
| Gly | Gly | Gly | Gly | Ser | Gly | Leu | Cys | Cys | Val | Pro | Pro | Ser | Leu | | 260 | 265 | |

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<211> 1706

<212> DNA

<213> Homo sapiens

<400> 373

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cagcaggtcg tccgggggcc caccatgctg gtgactgcct accttgcttt 150

tgtaggcctc ctggcctcct gcctggggct ggaactgtca agatgccggg 200

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<210> 374

<211> 450

<212> PRT

<213> Homo sapiens

<400> 374

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Val | Thr | Ala | Tyr | Leu | Ala | Phe | Val | Gly | Leu | Leu | Ala | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Leu | Gly | Leu | Glu | Leu | Ser | Arg | Cys | Arg | Ala | Lys | Pro | Pro | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Cys | Ser | Asn | Pro | Ser | Phe | Leu | Arg | Phe | Gln | Leu | Asp | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Gln | Val | Tyr | Phe | Leu | Ala | Leu | Ala | Ala | Asp | Trp | Leu | Gln | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Tyr | Leu | Tyr | Lys | Leu | Tyr | Gln | His | Tyr | Tyr | Phe | Leu | Glu | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ile | Ala | Ile | Leu | Tyr | Val | Cys | Gly | Leu | Ala | Ser | Thr | Val | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Leu | Val | Ala | Ser | Ser | Leu | Val | Asp | Trp | Leu | Gly | Arg | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ser | Cys | Val | Leu | Phe | Ser | Leu | Thr | Tyr | Ser | Leu | Cys | Cys | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Lys | Leu | Ser | Gln | Asp | Tyr | Phe | Val | Leu | Leu | Val | Gly | Arg | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Gly | Leu | Ser | Thr | Ala | Leu | Leu | Phe | Ser | Ala | Phe | Glu | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Tyr | Ile | His | Glu | His | Val | Glu | Arg | His | Asp | Phe | Pro | Ala | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Ile | Pro | Ala | Thr | Phe | Ala | Arg | Ala | Ala | Phe | Trp | Asn | His | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Val | Val | Ala | Gly | Val | Ala | Ala | Glu | Ala | Val | Ala | Ser | Trp |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Gly | Leu | Gly | Pro | Val | Ala | Pro | Phe | Val | Ala | Ala | Ile | Pro | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Leu | Ala | Gly | Ala | Leu | Ala | Leu | Arg | Asn | Trp | Gly | Glu | Asn |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Asp | Arg | Gln | Arg | Ala | Phe | Ser | Arg | Thr | Cys | Ala | Gly | Gly | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Cys | Leu | Leu | Ser | Asp | Arg | Arg | Val | Leu | Leu | Leu | Gly | Thr | Ile |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gln | Ala | Leu | Phe | Glu | Ser | Val | Ile | Phe | Ile | Phe | Val | Phe | Leu | Trp |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Thr | Pro | Val | Leu | Asp | Pro | His | Gly | Ala | Pro | Leu | Gly | Ile | Ile | Phe |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ser | Ser | Phe | Met | Ala | Ala | Ser | Leu | Leu | Gly | Ser | Ser | Leu | Tyr | Arg |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Ile | Ala | Thr | Ser | Lys | Arg | Tyr | His | Leu | Gln | Pro | Met | His | Leu | Leu |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ser | Leu | Ala | Val | Leu | Ile | Val | Val | Phe | Ser | Leu | Phe | Met | Leu | Thr |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Phe | Ser | Thr | Ser | Pro | Gly | Gln | Glu | Ser | Pro | Val | Glu | Ser | Phe | Ile |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Ala | Phe | Leu | Leu | Ile | Glu | Leu | Ala | Cys | Gly | Leu | Tyr | Phe | Pro | Ser |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Met | Ser | Phe | Leu | Arg | Arg | Lys | Val | Ile | Pro | Glu | Thr | Glu | Gln | Ala |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Gly | Val | Leu | Asn | Trp | Phe | Arg | Val | Pro | Leu | His | Ser | Leu | Ala | Cys |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Leu | Gly | Leu | Leu | Val | Leu | His | Asp | Ser | Asp | Arg | Lys | Thr | Gly | Thr |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Arg | Asn | Met | Phe | Ser | Ile | Cys | Ser | Ala | Val | Met | Val | Met | Ala | Leu |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Leu | Ala | Val | Val | Gly | Leu | Phe | Thr | Val | Val | Arg | His | Asp | Ala | Glu |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Leu | Arg | Val | Pro | Ser | Pro | Thr | Glu | Glu | Pro | Tyr | Ala | Pro | Glu | Leu |
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<211> 1098

<212> DNA

<213> Artificial

<400> 375

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cctgccaaag actttggtgg tatctttcac acaaggtatg agcagattca 250

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<210> 376

<211> 188

<212> PRT

<213> Homo sapiens

<400> 376

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Pro | Gly | Ala | Ala | Gly | Trp | Cys | Cys | Leu | Val | Leu | Trp | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Pro | Ala | Cys | Val | Ala | Ala | His | Gly | Phe | Arg | Ile | His | Asp | Tyr | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Tyr | Phe | Gln | Val | Leu | Ser | Pro | Gly | Asp | Ile | Arg | Tyr | Ile | Phe | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Thr | Pro | Ala | Lys | Asp | Phe | Gly | Gly | Ile | Phe | His | Thr | Arg | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Gln | Ile | His | Leu | Val | Pro | Ala | Glu | Pro | Pro | Glu | Ala | Cys | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Leu | Ser | Asn | Gly | Phe | Phe | Ile | Gln | Asp | Gln | Ile | Ala | Leu | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |

Glu Arg Gly Gly Cys Ser Phe Leu Ser Lys Thr Arg Val Val Gln
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 Glu His Gly Gly Arg Ala Val Ile Ile Ser Asp Asn Ala Val Asp
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 Asn Asp Ser Phe Tyr Val Glu Met Ile Gln Asp Ser Thr Gln Arg
 125 130 135
 Thr Ala Asp Ile Pro Ala Leu Phe Leu Leu Gly Arg Asp Gly Tyr
 140 145 150
 Met Ile Arg Arg Ser Leu Glu Gln His Gly Leu Pro Trp Ala Ile
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<210> 378
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 378

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| Met | Glu | Leu | Ala | Leu | Leu | Cys | Gly | Leu | Val | Val | Met | Ala | Gly | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ile | Pro | Ile | Gln | Gly | Gly | Ile | Leu | Asn | Leu | Asn | Lys | Met | Val | Lys |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Gln | Val | Thr | Gly | Lys | Met | Pro | Ile | Leu | Ser | Tyr | Trp | Pro | Tyr | Gly |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Cys | His | Cys | Gly | Leu | Gly | Gly | Arg | Gly | Gln | Pro | Lys | Asp | Ala | Thr |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Asp | Trp | Cys | Cys | Gln | Thr | His | Asp | Cys | Cys | Tyr | Asp | His | Leu | Lys |
| | | | 65 | | | | | 70 | | | | | | 75 |
| Thr | Gln | Gly | Cys | Gly | Ile | Tyr | Lys | Asp | Asn | Asn | Lys | Ser | Ser | Ile |
| | | | 80 | | | | | 85 | | | | | | 90 |
| His | Cys | Met | Asp | Leu | Ser | Gln | Arg | Tyr | Cys | Leu | Met | Ala | Val | Phe |
| | | | 95 | | | | | 100 | | | | | | 105 |
| Asn | Val | Ile | Tyr | Leu | Glu | Asn | Glu | Asp | Ser | Glu | | | | |
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<210> 379

<211> 24

<212> DNA

<213> Artificial

<220>

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<222> 1-24

<223> Synthetic construct.

<400> 379

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<210> 380

<211> 24

<212> DNA

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<220>

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<222> 1-24

<223> Synthetic construct.

<400> 380

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<210> 381

<211> 45

<212> DNA

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<222> 1-45

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<210> 382

<211> 764

<212> DNA

<213> Homo sapiens

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gggtgtctgt aggtcttctc ctggtgaaaa gtgtccaggt gaaacttggg 300
gactcctggg acgtgaaact gggagcctta ggtgggaata cccaggaagt 350
caccctgcag ccaggcgaat acatcacaaa agtctttgtc gccttccaag 400
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<210> 383

<211> 178

<212> PRT

<213> Homo sapiens

<400> 383

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| Met | His | Arg | Pro | Glu | Ala | Met | Leu | Leu | Leu | Leu | Thr | Leu | Ala | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Leu | Gly | Gly | Pro | Thr | Trp | Ala | Gly | Lys | Met | Tyr | Gly | Pro | Gly | Gly |
| | | | | 20 | | | | 25 | | | | | 30 | |
| Gly | Lys | Tyr | Phe | Ser | Thr | Thr | Glu | Asp | Tyr | Asp | His | Glu | Ile | Thr |
| | | | | 35 | | | | 40 | | | | | 45 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Leu | Arg | Val | Ser | Val | Gly | Leu | Leu | Leu | Val | Lys | Ser | Val | Gln | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Lys | Leu | Gly | Asp | Ser | Trp | Asp | Val | Lys | Leu | Gly | Ala | Leu | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Gly | Asn | Thr | Gln | Glu | Val | Thr | Leu | Gln | Pro | Gly | Glu | Tyr | Ile | Thr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Lys | Val | Phe | Val | Ala | Phe | Gln | Ala | Phe | Leu | Arg | Gly | Met | Val | Met | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Tyr | Thr | Ser | Lys | Asp | Arg | Tyr | Phe | Tyr | Phe | Gly | Lys | Leu | Asp | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gln | Ile | Ser | Ser | Ala | Tyr | Pro | Ser | Gln | Glu | Gly | Gln | Val | Leu | Val | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Ile | Tyr | Gly | Gln | Tyr | Gln | Leu | Leu | Gly | Ile | Lys | Ser | Ile | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Glu | Trp | Asn | Tyr | Pro | Leu | Glu | Glu | Pro | Thr | Thr | Glu | Pro | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Asn | Leu | Thr | Tyr | Ser | Ala | Asn | Ser | Pro | Val | Gly | Arg | | | |
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<210> 384

<211> 2379

<212> DNA

<213> Homo sapiens

<400> 384

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<210> 385
 <211> 513
 <212> PRT
 <213> Homo sapiens

<400> 385

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| Met | Gly | Phe | Asn | Val | Ile | Arg | Leu | Leu | Ser | Gly | Ser | Ala | Val | Ala | 1 | 5 | 10 | 15 |
| Leu | Val | Ile | Ala | Pro | Thr | Val | Leu | Leu | Thr | Met | Leu | Ser | Ser | Ala | 20 | 25 | 30 | |
| Glu | Arg | Gly | Cys | Pro | Lys | Gly | Cys | Arg | Cys | Glu | Gly | Lys | Met | Val | 35 | 40 | 45 | |
| Tyr | Cys | Glu | Ser | Gln | Lys | Leu | Gln | Glu | Ile | Pro | Ser | Ser | Ile | Ser | 50 | 55 | 60 | |
| Ala | Gly | Cys | Leu | Gly | Leu | Ser | Leu | Arg | Tyr | Asn | Ser | Leu | Gln | Lys | 65 | 70 | 75 | |
| Leu | Lys | Tyr | Asn | Gln | Phe | Lys | Gly | Leu | Asn | Gln | Leu | Thr | Trp | Leu | 80 | 85 | 90 | |
| Tyr | Leu | Asp | His | Asn | His | Ile | Ser | Asn | Ile | Asp | Glu | Asn | Ala | Phe | 95 | 100 | 105 | |
| Asn | Gly | Ile | Arg | Arg | Leu | Lys | Glu | Leu | Ile | Leu | Ser | Ser | Asn | Arg | 110 | 115 | 120 | |
| Ile | Ser | Tyr | Phe | Leu | Asn | Asn | Thr | Phe | Arg | Pro | Val | Thr | Asn | Leu | 125 | 130 | 135 | |
| Arg | Asn | Leu | Asp | Leu | Ser | Tyr | Asn | Gln | Leu | His | Ser | Leu | Gly | Ser | 140 | 145 | 150 | |
| Glu | Gln | Phe | Arg | Gly | Leu | Arg | Lys | Leu | Leu | Ser | Leu | His | Leu | Arg | 155 | 160 | 165 | |
| Ser | Asn | Ser | Leu | Arg | Thr | Ile | Pro | Val | Arg | Ile | Phe | Gln | Asp | Cys | 170 | 175 | 180 | |
| Arg | Asn | Leu | Glu | Leu | Leu | Asp | Leu | Gly | Tyr | Asn | Arg | Ile | Arg | Ser | 185 | 190 | 195 | |
| Leu | Ala | Arg | Asn | Val | Phe | Ala | Gly | Met | Ile | Arg | Leu | Lys | Glu | Leu | | | | |

| 200 | | | | | 205 | | | | | 210 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Glu | His | Asn | Gln | Phe | Ser | Lys | Leu | Asn | Leu | Ala | Leu | Phe |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Pro | Arg | Leu | Val | Ser | Leu | Gln | Asn | Leu | Tyr | Leu | Gln | Trp | Asn | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Ser | Val | Ile | Gly | Gln | Thr | Met | Ser | Trp | Thr | Trp | Ser | Ser | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gln | Arg | Leu | Asp | Leu | Ser | Gly | Asn | Glu | Ile | Glu | Ala | Phe | Ser | Gly |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Pro | Ser | Val | Phe | Gln | Cys | Val | Pro | Asn | Leu | Gln | Arg | Leu | Asn | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Asp | Ser | Asn | Lys | Leu | Thr | Phe | Ile | Gly | Gln | Glu | Ile | Leu | Asp | Ser |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Trp | Ile | Ser | Leu | Asn | Asp | Ile | Ser | Leu | Ala | Gly | Asn | Ile | Trp | Glu |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Cys | Ser | Arg | Asn | Ile | Cys | Ser | Leu | Val | Asn | Trp | Leu | Lys | Ser | Phe |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Lys | Gly | Leu | Arg | Glu | Asn | Thr | Ile | Ile | Cys | Ala | Ser | Pro | Lys | Glu |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Leu | Gln | Gly | Val | Asn | Val | Ile | Asp | Ala | Val | Lys | Asn | Tyr | Ser | Ile |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Cys | Gly | Lys | Ser | Thr | Thr | Glu | Arg | Phe | Asp | Leu | Ala | Arg | Ala | Leu |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Pro | Lys | Pro | Thr | Phe | Lys | Pro | Lys | Leu | Pro | Arg | Pro | Lys | His | Glu |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Ser | Lys | Pro | Pro | Leu | Pro | Pro | Thr | Val | Gly | Ala | Thr | Glu | Pro | Gly |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Pro | Glu | Thr | Asp | Ala | Asp | Ala | Glu | His | Ile | Ser | Phe | His | Lys | Ile |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Ile | Ala | Gly | Ser | Val | Ala | Leu | Phe | Leu | Ser | Val | Leu | Val | Ile | Leu |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Leu | Val | Ile | Tyr | Val | Ser | Trp | Lys | Arg | Tyr | Pro | Ala | Ser | Met | Lys |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Gln | Leu | Gln | Gln | Arg | Ser | Leu | Met | Arg | Arg | His | Arg | Lys | Lys | Lys |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Arg | Gln | Ser | Leu | Lys | Gln | Met | Thr | Pro | Ser | Thr | Gln | Glu | Phe | Tyr |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Val | Asp | Tyr | Lys | Pro | Thr | Asn | Thr | Glu | Thr | Ser | Glu | Met | Leu | Leu |
| | | | | 485 | | | | | 490 | | | | | 495 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gly | Thr | Gly | Pro | Cys | Thr | Tyr | Asn | Lys | Ser | Gly | Ser | Arg | Glu |
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Cys Glu Val

<210> 386
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic construct.

<400> 386
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<210> 387
 <211> 24
 <212> DNA
 <213> Artificial

<220>
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 <222> 1-24
 <223> Synthetic construct.

<400> 387
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<210> 388
 <211> 48
 <212> DNA
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<220>
 <221> Artificial Sequence
 <222> 1-48
 <223> Synthetic construct.

<400> 388
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<210> 389
 <211> 1449
 <212> DNA
 <213> Homo sapiens

<400> 389
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 gcgatctcaa cgatagggat cttgtgtttg ccgtattcc agttggtgct 150
 ctcgaccta ccatgcgaag aagatgaaat gtgtgtaaat tataatgacc 200

aacaccctaa tggctggtat atctggatcc tcctgctgct ggttttgggtg 250
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 gcagaagtag caatgagaca tcttcaagtg gcattttggc agtggccatc 1350
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 ctgacaaatt tgttgaacaa aacaataaac atcaatagat atctaaaaa 1449

<210> 390

<211> 146

<212> PRT

<213> Homo sapiens

<400> 390

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Arg | Ser | Arg | Leu | Phe | Ser | Val | Thr | Ser | Ala | Ile | Ser | Thr |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Gly | Ile | Leu | Cys | Leu | Pro | Leu | Phe | Gln | Leu | Val | Leu | Ser | Asp | 20 | 25 | 30 |
| Leu | Pro | Cys | Glu | Glu | Asp | Glu | Met | Cys | Val | Asn | Tyr | Asn | Asp | Gln | 35 | 40 | 45 |
| His | Pro | Asn | Gly | Trp | Tyr | Ile | Trp | Ile | Leu | Leu | Leu | Leu | Val | Leu | 50 | 55 | 60 |
| Val | Ala | Ala | Leu | Leu | Cys | Gly | Ala | Val | Val | Leu | Cys | Leu | Gln | Cys | 65 | 70 | 75 |
| Trp | Leu | Arg | Arg | Pro | Arg | Ile | Asp | Ser | His | Arg | Arg | Thr | Met | Ala | 80 | 85 | 90 |
| Val | Phe | Ala | Val | Gly | Asp | Leu | Asp | Ser | Ile | Tyr | Gly | Thr | Glu | Ala | 95 | 100 | 105 |
| Ala | Val | Ser | Pro | Thr | Val | Gly | Ile | His | Leu | Gln | Thr | Gln | Thr | Pro | 110 | 115 | 120 |
| Asp | Leu | Tyr | Pro | Val | Pro | Ala | Pro | Cys | Phe | Gly | Pro | Leu | Gly | Ser | 125 | 130 | 135 |
| Pro | Pro | Pro | Tyr | Glu | Glu | Ile | Val | Lys | Thr | Thr | | | | | 140 | 145 | |

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 <212> DNA
 <213> Artificial

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 <222> 1-26
 <223> Synthetic construct.

<400> 391
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<210> 392
 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 392
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<210> 393
 <211> 47
 <212> DNA
 <213> Artificial

<220>
<221> Artificial Sequence
<222> 1-47
<223> Synthetic construct.

<400> 393
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<210> 394
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<400> 394
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aagctccgtg gcggcggcga ccgtgacgag aagcccacgg ccagctcagt 200
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ttttcaagtc ttgatttgtg gcttacctca agttaccatt tttcagtcaa 400
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<213> Homo sapiens

<400> 395

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| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Leu | Leu | Leu | Val | Phe | Gly | Leu | Ile | Trp | Gly | Leu | Met | Leu | Leu | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| His | Tyr | Thr | Phe | Gln | Gln | Pro | Arg | His | Gln | Ser | Ser | Val | Lys | Leu | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Arg | Glu | Gln | Ile | Leu | Asp | Leu | Ser | Lys | Arg | Tyr | Val | Lys | Ala | Leu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Ala | Glu | Glu | Asn | Lys | Asn | Thr | Val | Asp | Val | Glu | Asn | Gly | Ala | Ser | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Met | Ala | Gly | Tyr | Ala | Asp | Leu | Lys | Arg | Thr | Ile | Ala | Val | Leu | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Asp | Asp | Ile | Leu | Gln | Arg | Leu | Val | Lys | Leu | Glu | Asn | Lys | Val | Asp | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Tyr | Ile | Val | Val | Asn | Gly | Ser | Ala | Ala | Asn | Thr | Thr | Asn | Gly | Thr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Gly | Asn | Leu | Val | Pro | Val | Thr | Thr | Asn | Lys | Arg | Thr | Asn | Val | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
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<212> PRT

<213> Homo sapiens

<400> 397

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| Met | Pro | Trp | Pro | Leu | Leu | Leu | Leu | Leu | Ala | Val | Ser | Gly | Ala | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Thr | Arg | Pro | Cys | Phe | Pro | Gly | Cys | Gln | Cys | Glu | Val | Glu | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Leu | Phe | Asp | Ser | Phe | Ser | Leu | Thr | Arg | Val | Asp | Cys | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Gly | Pro | His | Ile | Met | Pro | Val | Pro | Ile | Pro | Leu | Asp | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | His | Leu | Asp | Leu | Ser | Ser | Asn | Arg | Leu | Glu | Met | Val | Asn | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Leu | Ala | Gly | Pro | Gly | Tyr | Thr | Thr | Leu | Ala | Gly | Leu | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | His | Asn | Leu | Leu | Thr | Ser | Ile | Ser | Pro | Thr | Ala | Phe | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Leu | Arg | Tyr | Leu | Glu | Ser | Leu | Asp | Leu | Ser | His | Asn | Gly | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Leu | Pro | Ala | Glu | Ser | Phe | Thr | Ser | Ser | Pro | Leu | Ser | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asn | Leu | Ser | His | Asn | Gln | Leu | Arg | Glu | Val | Ser | Val | Ser | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | |
|---|-----|-----|-----|
| Phe Thr Thr His Ser Gln Gly Arg Ala Leu His Val Asp Leu Ser | 155 | 160 | 165 |
| His Asn Leu Ile His Arg Leu Val Pro His Pro Thr Arg Ala Gly | 170 | 175 | 180 |
| Leu Pro Ala Pro Thr Ile Gln Ser Leu Asn Leu Ala Trp Asn Arg | 185 | 190 | 195 |
| Leu His Ala Val Pro Asn Leu Arg Asp Leu Pro Leu Arg Tyr Leu | 200 | 205 | 210 |
| Ser Leu Asp Gly Asn Pro Leu Ala Val Ile Gly Pro Gly Ala Phe | 215 | 220 | 225 |
| Ala Gly Leu Gly Gly Leu Thr His Leu Ser Leu Ala Ser Leu Gln | 230 | 235 | 240 |
| Arg Leu Pro Glu Leu Ala Pro Ser Gly Phe Arg Glu Leu Pro Gly | 245 | 250 | 255 |
| Leu Gln Val Leu Asp Leu Ser Gly Asn Pro Lys Leu Asn Trp Ala | 260 | 265 | 270 |
| Gly Ala Glu Val Phe Ser Gly Leu Ser Ser Leu Gln Glu Leu Asp | 275 | 280 | 285 |
| Leu Ser Gly Thr Asn Leu Val Pro Leu Pro Glu Ala Leu Leu Leu | 290 | 295 | 300 |
| His Leu Pro Ala Leu Gln Ser Val Ser Val Gly Gln Asp Val Arg | 305 | 310 | 315 |
| Cys Arg Arg Leu Val Arg Glu Gly Thr Tyr Pro Arg Arg Pro Gly | 320 | 325 | 330 |
| Ser Ser Pro Lys Val Pro Leu His Cys Val Asp Thr Arg Glu Ser | 335 | 340 | 345 |
| Ala Ala Arg Gly Pro Thr Ile Leu | 350 | | |

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 <211> 23
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence
 <222> 1-23
 <223> Synthetic construct.

<400> 398
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<210> 399
 <211> 23
 <212> DNA

Figure 1 consists of 12 line graphs arranged in a 6x2 grid, labeled (a) through (l). Each graph plots a physiological parameter over time. The x-axis for all graphs represents time, with a baseline period followed by a 10-minute intervention period. The y-axis represents the magnitude of the parameter. The parameters are: (a) HR (b/min), (b) SBP (mmHg), (c) DBP (mmHg), (d) MAP (mmHg), (e) SV (ml), (f) CO (l/min), (g) SVR (mmHg/l/min), (h) PVR (mmHg/l/min), (i) PPA (mmHg), (j) PVP (mmHg), (k) PIP (mmHg), and (l) PIP (mmHg). The graphs show that during the intervention period, HR, SBP, DBP, MAP, SV, and CO increase, while SVR, PVR, PPA, PVP, PIP, and PIP decrease.

<223> Synthetic construct.

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<213> Artificial

<223> Synthetic construct.

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<213> Homo sapiens

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<400> 402
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 35 40 45
 Gly Ala Thr Thr Cys Ala Thr Asn Ser His Ser Asp Ser Glu Leu
 50 55 60
 Arg Pro Glu Ile Phe Ser Ser Arg Glu Ala Trp Gln Phe Phe Leu
 65 70 75
 Leu Leu Trp Ser Pro Asp Phe Arg Pro Lys Met Lys Ala Ser Ser
 80 85 90

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Phe | Ser | Leu | Leu | Ser | Ala | Ala | Phe | Tyr | Leu | Leu | Trp | Thr | 95 | 100 | 105 |
| Pro | Ser | Thr | Gly | Leu | Lys | Thr | Leu | Asn | Leu | Gly | Ser | Cys | Val | Ile | 110 | 115 | 120 |
| Ala | Thr | Asn | Leu | Gln | Glu | Ile | Arg | Asn | Gly | Phe | Ser | Glu | Ile | Arg | 125 | 130 | 135 |
| Gly | Ser | Val | Gln | Ala | Lys | Asp | Gly | Asn | Ile | Asp | Ile | Arg | Ile | Leu | 140 | 145 | 150 |
| Arg | Arg | Thr | Glu | Ser | Leu | Gln | Asp | Thr | Lys | Pro | Ala | Asn | Arg | Cys | 155 | 160 | 165 |
| Cys | Leu | Leu | Arg | His | Leu | Leu | Arg | Leu | Tyr | Leu | Asp | Arg | Val | Phe | 170 | 175 | 180 |
| Lys | Asn | Tyr | Gln | Thr | Pro | Asp | His | Tyr | Thr | Leu | Arg | Lys | Ile | Ser | 185 | 190 | 195 |
| Ser | Leu | Ala | Asn | Ser | Phe | Leu | Thr | Ile | Lys | Lys | Asp | Leu | Arg | Leu | 200 | 205 | 210 |
| Ser | His | Ala | His | Met | Thr | Cys | His | Cys | Gly | Glu | Glu | Ala | Met | Lys | 215 | 220 | 225 |
| Lys | Tyr | Ser | Gln | Ile | Leu | Ser | His | Phe | Glu | Lys | Leu | Glu | Pro | Gln | 230 | 235 | 240 |
| Ala | Ala | Val | Val | Lys | Ala | Leu | Gly | Glu | Leu | Asp | Ile | Leu | Leu | Gln | 245 | 250 | 255 |
| Trp | Met | Glu | Glu | Thr | Glu | | | | | | | | | | 260 | | |

<210> 403

<211> 28

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-28

<223> Synthetic construct.

<400> 403

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<211> 26

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-26

<223> Synthetic construct.

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<212> PRT
<213> Homo sapiens

<400> 406
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305

310

315

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320

<210> 407
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<212> DNA
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<220>
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<223> Synthetic construct.

<400> 407
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<210> 408
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<212> DNA
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<220>
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<223> Synthetic construct.

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<212> DNA
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380

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 gctcatgcct gtaatccag cactttggga ggccgaggcg ggccgattgc 1000
 ttgagggtcaa gtgtttgaga ccagcctggc caacatggcg aaaccccatc 1050
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 cagctacctg ggaggctgag gcaggagaat cgcttgaacc cggggggcag 1150
 aggttgcagt gagctgagtt tgcgccactg cactctagcc tgggggagaa 1200
 agtgaaactc cctctcaaaa aaaagaccac tctcagtatc tctgatttct 1250
 gaagatgtac aaaaaaatat agcttcatat atctggaatg agcactgagc 1300
 cataaaaggt tttcagcaag ttgtaactta ttttggccta aaaatgaggt 1350
 ttttttggtg aagaaaaaat atttgttctt atgtattgaa gaagtgtact 1400
 tttatataat gattttttta atgcccaaag gactagtttg aaagcttctt 1450
 ttaaaaagaa ttcctcta atgactttat gtgagaa 1487

<210> 410

<211> 158

<212> PRT

<213> Homo sapiens

<400> 410

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Phe | Leu | Asp | Asn | Phe | Arg | Trp | Pro | Glu | Cys | Glu | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ile | Asp | Trp | Ser | Glu | Arg | Arg | Asn | Ala | Val | Ala | Ser | Val | Val | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Ile | Leu | Phe | Phe | Thr | Gly | Trp | Trp | Ile | Met | Ile | Asp | Ala | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Val | Tyr | Pro | Lys | Pro | Glu | Gln | Leu | Asn | His | Ala | Phe | His | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Gly | Val | Phe | Ser | Thr | Leu | Ala | Phe | Phe | Met | Ile | Asn | Ala | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |

Ser Asn Ala Gln Val Arg Gly Asp Ser Tyr Glu Ser Gly Cys Leu
80 85 90

Gly Arg Thr Gly Ala Arg Val Trp Leu Phe Ile Gly Phe Met Leu
95 100 105

Met Phe Gly Ser Leu Ile Ala Ser Met Trp Ile Leu Phe Gly Ala
110 115 120

Tyr Val Thr Gln Asn Thr Asp Val Tyr Pro Gly Leu Ala Val Phe
125 130 135

Phe Gln Asn Ala Leu Ile Phe Phe Ser Thr Leu Ile Tyr Lys Phe
140 145 150

Gly Arg Thr Glu Glu Leu Trp Thr
155

<210> 411

<211> 20

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-20

<223> Synthetic construct.

<400> 411

gtttgaggaa gctgggatac 20

<210> 412

<211> 20

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-20

<223> Synthetic construct.

<400> 412

ccaaactcga gcacctgttc 20

<210> 413

<211> 40

<212> DNA

<213> Artificial

<220>

<221> Artificial Sequence

<222> 1-40

<223> Synthetic construct.

<400> 413

atggcaggct tcctagataa ttttcggttg ccagaatgtg 40

<210> 414

<211> 1337
<212> DNA
<213> Homo sapiens

<400> 414

gttgatggca aacttcctca aaggaggggc agagcctgcg cagggcagga 50
gcagctggcc cactggcggc ccgcaacact ccgtctcacc ctctgggccc 100
actgcatcta gaggagggcc gtctgtgagg ccactacccc tccagcaact 150
gggaggtggg actgtcagaa gctggcccag ggtggtggtc agctgggtca 200
gggacctacg gcacctgctg gaccacctcg ccttctccat cgaagcaggg 250
aagtgggagc ctcgagccct cgggtggaag ctgaccccaa gccacccttc 300
acctggacag gatgagagtg tcaggtgtgc ttgcctcctt ggccctcatc 350
tttgccatag tcacgacatg gatgtttatt cgaagctaca tgagcttcag 400
catgaaaacc atccgtctgc cacgctggct ggagcctcg cccaccaagg 450
agatccaggt taaaaagtac aagtgtggcc tcatcaagcc ctgcccagcc 500
aactactttg cgttttaaat ctgcagtggg gccgccaacg tcgtgggccc 550
tactatgtgc tttgaagacc gcatgatcat gagtcctgtg aaaaacaatg 600
tgggcagagg cctaaacatc gccctggtga atggaaccac gggagctgtg 650
ctgggacaga aggcatttga catgtactct ggagatgtta tgcacctagt 700
gaaattcctt aaagaaattc cggggggtgc actggtgctg gtggcctcct 750
acgacgatcc agggaccaa atgaacgatg aaagcaggaa actcttctct 800
gacttgggga gttcctacgc aaaacaactg ggcttcggg acagctgggt 850
cttcatagga gccaaagacc tcaggggtaa aagccccctt gagcagttct 900
taaagaacag ccagacaca aacaaatacg agggatggcc agagctgctg 950
gagatggagg gctgcatgcc ccggaagcca ttttagggtg gctgtggctc 1000
ttcctcagcc aggggcctga agaagctcct gcctgactta ggagtcagag 1050
cccggcaggg gctgaggagg aggagcaggg ggtgctgcgt ggaagggtgct 1100
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tcccacagca catcctaccc ggaagaccag cctcagaggg tccttctgga 1200
accagctgtc tgtggagaga atggggtgct ttcgtcaggg actgctgacg 1250
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tatttttgcg ggttttgaaa aaaaaaaaaa aaaaaaa 1337

<210> 415
 <211> 224
 <212> PRT
 <213> Homo sapiens

<400> 415

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Val | Ser | Gly | Val | Leu | Arg | Leu | Leu | Ala | Leu | Ile | Phe | Ala | 1 | 5 | 10 | 15 |
| Ile | Val | Thr | Thr | Trp | Met | Phe | Ile | Arg | Ser | Tyr | Met | Ser | Phe | Ser | 20 | 25 | 30 | |
| Met | Lys | Thr | Ile | Arg | Leu | Pro | Arg | Trp | Leu | Ala | Ala | Ser | Pro | Thr | 35 | 40 | 45 | |
| Lys | Glu | Ile | Gln | Val | Lys | Lys | Tyr | Lys | Cys | Gly | Leu | Ile | Lys | Pro | 50 | 55 | 60 | |
| Cys | Pro | Ala | Asn | Tyr | Phe | Ala | Phe | Lys | Ile | Cys | Ser | Gly | Ala | Ala | 65 | 70 | 75 | |
| Asn | Val | Val | Gly | Pro | Thr | Met | Cys | Phe | Glu | Asp | Arg | Met | Ile | Met | 80 | 85 | 90 | |
| Ser | Pro | Val | Lys | Asn | Asn | Val | Gly | Arg | Gly | Leu | Asn | Ile | Ala | Leu | 95 | 100 | 105 | |
| Val | Asn | Gly | Thr | Thr | Gly | Ala | Val | Leu | Gly | Gln | Lys | Ala | Phe | Asp | 110 | 115 | 120 | |
| Met | Tyr | Ser | Gly | Asp | Val | Met | His | Leu | Val | Lys | Phe | Leu | Lys | Glu | 125 | 130 | 135 | |
| Ile | Pro | Gly | Gly | Ala | Leu | Val | Leu | Val | Ala | Ser | Tyr | Asp | Asp | Pro | 140 | 145 | 150 | |
| Gly | Thr | Lys | Met | Asn | Asp | Glu | Ser | Arg | Lys | Leu | Phe | Ser | Asp | Leu | 155 | 160 | 165 | |
| Gly | Ser | Ser | Tyr | Ala | Lys | Gln | Leu | Gly | Phe | Arg | Asp | Ser | Trp | Val | 170 | 175 | 180 | |
| Phe | Ile | Gly | Ala | Lys | Asp | Leu | Arg | Gly | Lys | Ser | Pro | Phe | Glu | Gln | 185 | 190 | 195 | |
| Phe | Leu | Lys | Asn | Ser | Pro | Asp | Thr | Asn | Lys | Tyr | Glu | Gly | Trp | Pro | 200 | 205 | 210 | |
| Glu | Leu | Leu | Glu | Met | Glu | Gly | Cys | Met | Pro | Pro | Lys | Pro | Phe | 215 | 220 | | | |

<210> 416
 <211> 21
 <212> DNA
 <213> Artificial

<220>
 <221> Artificial Sequence

<222> 1-21
<223> Synthetic construct.

<400> 416
gccatagtca cgacatggat g 21

<210> 417
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 417
ggatggccag agctgctg 18

<210> 418
<211> 26
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-26
<223> Synthetic construct.

<400> 418
aaagtacaag tgtggcctca tcaagc 26

<210> 419
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 419
tctgactcct aagtcaggca ggag 24

<210> 420
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 420
attctctcca cagacagctg gttc 24

<210> 421
<211> 46
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-46
<223> Synthetic construct.

<400> 421
gtacaagtgt ggccatcatca agccctgccc agccaactac tttgcg 46

<210> 422
<211> 1701
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1528
<223> unknown base

<400> 422
gagactgcag agggagataa agagagaggg caaagaggca gcaagagatt 50
tgtcctgggg atccagaaac ccatgatacc ctactgaaca ccgaatcccc 100
tggaagccca cagagacaga gacagcaaga gaagcagaga taaatacact 150
cacgccagga gctcgctcgc tctctctctc tctctctcac tctccctcc 200
ctctctctct gcctgtccta gtcctctagt cctcaaattc ccagtccct 250
gcaccccttc ctgggacact atgttgttct ccgccctcct gctggaggtg 300
atttgatcc tggctgcaga tgggggtcaa cactggacgt atgagggccc 350
acatggtcag gaccattggc cagcctctta ccctgagtgt ggaaacaatg 400
cccagtcgcc catcgatatt cagacagaca gtgtgacatt tgaccctgat 450
ttgcctgctc tgcagcccca cggatatgac cagcctggca ccgagccttt 500
ggacctgcac aacaatggcc acacagtgc actctctctg ccctctaccc 550
tgtatctggg tggacttccc cgaaaatatg tagctgcccc gctccacctg 600
cactgggggc agaaaggatc ccagggggg tcagaacacc agatcaacag 650
tgaagccaca tttgcagagc tccacattgt acattatgac totgattcct 700
atgacagctt gagtgaggct gctgagaggc ctcagggcct ggotgtcctg 750
ggcatcctaa ttgaggtggg tgagactaag aatatagctt atgaacacat 800
tctgagtcac ttgcatgaag tcaggcataa agatcagaag acctcagtgc 850

ctcccttcaa cctaagagag ctgctcccca aacagctggg gcagtacttc 900
cgctacaatg gctcgctcac aactccccct tgctaccaga gtgtgctctg 950
gacagttttt tatagaaggt cccagatttc aatggaacag ctggaaaagc 1000
ttcaggggac attgttctcc acagaagagg agccctctaa gcttctggta 1050
cagaactacc gagcccttca gcctctcaat cagcgcatgg tctttgcttc 1100
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attgctagaa agattcggaa gaagaggctg gaaaaccgaa agagtgtggt 1250
cttcacctca gcacaagcca cgactgaggc ataaattcct tctcagatac 1300
catggatgtg gatgacttcc cttcatgcct atcaggaagc ctctaaaatg 1350
gggtgtagga tctggccaga aacactgtag gagtagtaag cagatgtcct 1400
ccttcccctg gacatctctt agagaggaat ggaccaggc tgtcattcca 1450
ggaagaactg cagagccttc agcctctcca aacatgtagg aggaaatgag 1500
gaaatcgctg tgttgtaaat gcagaganca aactctgttt agttgcaggg 1550
gaagtttggg atatacccca aagtcctcta cccctcact tttatggccc 1600
tttccttaga tatactgcgg gatctctcct taggataaag agttgctgtt 1650
gaagttgtat atttttgatc aatatatttg gaaattaaag tttctgactt 1700
t 1701

<210> 423

<211> 337

<212> PRT

<213> Homo sapiens

<400> 423

Met Leu Phe Ser Ala Leu Leu Leu Glu Val Ile Trp Ile Leu Ala
1 5 10 15

Ala Asp Gly Gly Gln His Trp Thr Tyr Glu Gly Pro His Gly Gln
20 25 30

Asp His Trp Pro Ala Ser Tyr Pro Glu Cys Gly Asn Asn Ala Gln
35 40 45

Ser Pro Ile Asp Ile Gln Thr Asp Ser Val Thr Phe Asp Pro Asp
50 55 60

Leu Pro Ala Leu Gln Pro His Gly Tyr Asp Gln Pro Gly Thr Glu
65 70 75

Pro Leu Asp Leu His Asn Asn Gly His Thr Val Gln Leu Ser Leu

| 80 | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ser | Thr | Leu | Tyr | Leu | Gly | Gly | Leu | Pro | Arg | Lys | Tyr | Val | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Gln | Leu | His | Leu | His | Trp | Gly | Gln | Lys | Gly | Ser | Pro | Gly | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Glu | His | Gln | Ile | Asn | Ser | Glu | Ala | Thr | Phe | Ala | Glu | Leu | His |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ile | Val | His | Tyr | Asp | Ser | Asp | Ser | Tyr | Asp | Ser | Leu | Ser | Glu | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ala | Glu | Arg | Pro | Gln | Gly | Leu | Ala | Val | Leu | Gly | Ile | Leu | Ile | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | Gly | Glu | Thr | Lys | Asn | Ile | Ala | Tyr | Glu | His | Ile | Leu | Ser | His |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | His | Glu | Val | Arg | His | Lys | Asp | Gln | Lys | Thr | Ser | Val | Pro | Pro |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Phe | Asn | Leu | Arg | Glu | Leu | Leu | Pro | Lys | Gln | Leu | Gly | Gln | Tyr | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Tyr | Asn | Gly | Ser | Leu | Thr | Thr | Pro | Pro | Cys | Tyr | Gln | Ser | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Trp | Thr | Val | Phe | Tyr | Arg | Arg | Ser | Gln | Ile | Ser | Met | Glu | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Glu | Lys | Leu | Gln | Gly | Thr | Leu | Phe | Ser | Thr | Glu | Glu | Glu | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ser | Lys | Leu | Leu | Val | Gln | Asn | Tyr | Arg | Ala | Leu | Gln | Pro | Leu | Asn |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gln | Arg | Met | Val | Phe | Ala | Ser | Phe | Ile | Gln | Ala | Gly | Ser | Ser | Tyr |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Thr | Thr | Gly | Glu | Met | Leu | Ser | Leu | Gly | Val | Gly | Ile | Leu | Val | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Cys | Leu | Cys | Leu | Leu | Leu | Ala | Val | Tyr | Phe | Ile | Ala | Arg | Lys | Ile |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Arg | Lys | Lys | Arg | Leu | Glu | Asn | Arg | Lys | Ser | Val | Val | Phe | Thr | Ser |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ala | Gln | Ala | Thr | Thr | Glu | Ala | | | | | | | | |
| | | | | 335 | | | | | | | | | | |

<210> 424
 <211> 18
 <212> DNA
 <213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 424
gtaaagtcgc tggccagc 18

<210> 425
<211> 18
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-18
<223> Synthetic construct.

<400> 425
cccgatctgc ctgctgta 18

<210> 426
<211> 24
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-24
<223> Synthetic construct.

<400> 426
ctgcactgta tggccattat tgtg 24

<210> 427
<211> 45
<212> DNA
<213> Artificial

<220>
<221> Artificial Sequence
<222> 1-45
<223> Synthetic construct.

<400> 427
cagaaacca tgatacccta ctgaacaccg aatcccctgg aagcc 45

<210> 428
<211> 1073
<212> DNA
<213> Homo sapiens

<400> 428
aatttttcac cagagtaaac ttgagaaacc aactggacct tgagtattgt 50
acattttgcc tcgtggaccc aaaggtagca atctgaaaca tgaggagtac 100
gattctactg ttttgtcttc taggatcaac tcggtcatta ccacagctca 150

aacctgcttt gggactocct ccacaaaaac tggctccgga tcagggaaca 200
 ctaccaaaacc aacagcagtc aaatcaggtc tttccttctt taagtctgat 250
 accattaaca cagatgctca cactggggcc agatctgcat ctgttaaatac 300
 ctgctgcagg aatgacacct ggtaccaga cccaccatt gaccctggga 350
 gggttgaatg tacaacagca actgcacca catgtgttac caatttttgt 400
 cacacaactt ggagcccagg gcactatcct aagctcagag gaattgccac 450
 aaatcttcac gagcctcctc atccattcct tgttcccggg aggcctcctg 500
 cccaccagtc aggcaggggc taatccagat gtccaggatg gaagccttcc 550
 agcaggagga gcagggtgaa atcctgccac ccagggaacc ccagcaggcc 600
 gcctccaac tcccagtggc acagatgacg actttgcagt gaccaccct 650
 gcaggcatcc aaaggagcac acatgccatc gaggaagcca ccacagaatac 700
 agcaaataga attcagtaag ctgtttcaaa ttttttcaac taagctgcct 750
 cgaatttggt gatacatgtg aatctttatc attgattata ttatggaata 800
 gattgagaca cattggatag tcttagaaga aattaattct taatttacct 850
 gaaaatattc ttgaaatttc agaaaatatg ttctatgtag agaatcccaa 900
 cttttaaaaa caataattca atggataaat ctgtctttga aatataacat 950
 tatgctgcct ggatgatatg catattaaaa catatttgga aaactggaaa 1000
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1050
 aaaaaaaaaa aaaaaaaaaa aaa 1073

<210> 429

<211> 209

<212> PRT

<213> Homo sapiens

<400> 429

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Ser | Thr | Ile | Leu | Leu | Phe | Cys | Leu | Leu | Gly | Ser | Thr | Arg |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Ser | Leu | Pro | Gln | Leu | Lys | Pro | Ala | Leu | Gly | Leu | Pro | Pro | Thr | Lys |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Leu | Ala | Pro | Asp | Gln | Gly | Thr | Leu | Pro | Asn | Gln | Gln | Gln | Ser | Asn |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Gln | Val | Phe | Pro | Ser | Leu | Ser | Leu | Ile | Pro | Leu | Thr | Gln | Met | Leu |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Thr | Leu | Gly | Pro | Asp | Leu | His | Leu | Leu | Asn | Pro | Ala | Ala | Gly | Met |
| | | | 65 | | | | | 70 | | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Gly | Thr | Gln | Thr | His | Pro | Leu | Thr | Leu | Gly | Gly | Leu | Asn | 80 | 85 | 90 |
| Val | Gln | Gln | Gln | Leu | His | Pro | His | Val | Leu | Pro | Ile | Phe | Val | Thr | 95 | 100 | 105 |
| Gln | Leu | Gly | Ala | Gln | Gly | Thr | Ile | Leu | Ser | Ser | Glu | Glu | Leu | Pro | 110 | 115 | 120 |
| Gln | Ile | Phe | Thr | Ser | Leu | Ile | Ile | His | Ser | Leu | Phe | Pro | Gly | Gly | 125 | 130 | 135 |
| Ile | Leu | Pro | Thr | Ser | Gln | Ala | Gly | Ala | Asn | Pro | Asp | Val | Gln | Asp | 140 | 145 | 150 |
| Gly | Ser | Leu | Pro | Ala | Gly | Gly | Ala | Gly | Val | Asn | Pro | Ala | Thr | Gln | 155 | 160 | 165 |
| Gly | Thr | Pro | Ala | Gly | Arg | Leu | Pro | Thr | Pro | Ser | Gly | Thr | Asp | Asp | 170 | 175 | 180 |
| Asp | Phe | Ala | Val | Thr | Thr | Pro | Ala | Gly | Ile | Gln | Arg | Ser | Thr | His | 185 | 190 | 195 |
| Ala | Ile | Glu | Glu | Ala | Thr | Thr | Glu | Ser | Ala | Asn | Gly | Ile | Gln | | 200 | 205 | |

<210> 430
 <211> 1257
 <212> DNA
 <213> Homo Sapien

<400> 430
 ggagagagggc gcgcgggtga aaggcgcatt gatgcagcct gcggcggcct 50
 cggagcgcgg cggagccaga cgctgaccac gttcctctcc tcggtctcct 100
 ccgcctccag ctccgcgctg cccggcagcc gggagccatg cgaccccagg 150
 gccccgccgc ctccccgcag cggctccgcg gcctcctgct gctcctgctg 200
 ctgcagctgc ccgcgcgctc gagcgctct gagatcccca aggggaagca 250
 aaaggcgcag ctccggcaga gggaggtggt ggacctgtat aatggaatgt 300
 gcttacaagg gccagcagga gtgcctggtc gagacgggag ccctggggcc 350
 aatgttattc cgggtacacc tgggatccca ggtcgggatg gattcaaagg 400
 agaaaagggg gaatgtctga gggaaagctt tgaggagtcc tggacacca 450
 actacaagca gtgttcatgg agttcattga attatggcat agatcttggg 500
 aaaattgcgg agtgtacatt tacaagatg cgttcaaata gtgctctaag 550
 agttttgttc agtggctcac ttcggtctaaa atgcagaaat gcatgctgtc 600
 agcgttggtgta ttccacattc aatggagctg aatgttcagg acctcttccc 650

attgaagcta taatttattt ggaccaagga agccctgaaa tgaattcaac 700
aattaatatt catgcactt cttctgtgga aggactttgt gaaggaattg 750
gtgctggatt agtggatgtt gctatctggg ttggcacttg ttcagattac 800
ccaaaaggag atgcttctac tggatggaat tcagtttctc gcatcattat 850
tgaagaacta ccaaaataaa tgctttaatt ttcatttgct acctcttttt 900
ttattatgcc ttggaatggt tcacttaaata gacattttta ataagtttat 950
gtatacatct gaatgaaaag caaagctaaa tatgtttaca gaccaaagtg 1000
tgatttcaca ctgtttttta atctagcatt attcattttg cttcaatcaa 1050
aagtggtttc aatatttttt ttagttggtt agaatacttt cttcatagtc 1100
acattctctc aacctataat ttggaatatt gttgtgtct tttgtttttt 1150
ctcttagtat agcattttta aaaaaatata aaagctacca atctttgtac 1200
aatttgtaaa tgtaagaat tttttttata tctgttaaata aaaaattatt 1250
tccaaca 1257

<210> 431
<211> 243
<212> PRT
<213> Homo Sapien

<400> 431
Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly
1 5 10 15
Leu Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala
20 25 30
Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
35 40 45
Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala
50 55 60
Gly Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Val Ile Pro
65 70 75
Gly Thr Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys
80 85 90
Gly Glu Cys Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn
95 100 105
Tyr Lys Gln Cys Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu
110 115 120
Gly Lys Ile Ala Glu Cys Thr Phe Thr Lys Met Arg Ser Asn Ser
125 130 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Arg | Val | Leu | Phe | Ser | Gly | Ser | Leu | Arg | Leu | Lys | Cys | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Asn | Ala | Cys | Cys | Gln | Arg | Trp | Tyr | Phe | Thr | Phe | Asn | Gly | Ala | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Cys | Ser | Gly | Pro | Leu | Pro | Ile | Glu | Ala | Ile | Ile | Tyr | Leu | Asp | Gln |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Ser | Pro | Glu | Met | Asn | Ser | Thr | Ile | Asn | Ile | His | Arg | Thr | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Val | Glu | Gly | Leu | Cys | Glu | Gly | Ile | Gly | Ala | Gly | Leu | Val | Asp |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Ala | Ile | Trp | Val | Gly | Thr | Cys | Ser | Asp | Tyr | Pro | Lys | Gly | Asp |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Ser | Thr | Gly | Trp | Asn | Ser | Val | Ser | Arg | Ile | Ile | Ile | Glu | Glu |
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Leu Pro Lys

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